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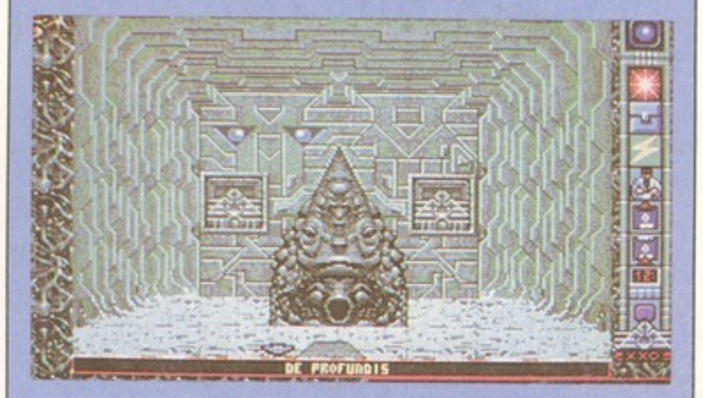

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SECTIONS FOR Amiga • Atari ST • PC • PCW • Spectrum • CPC • C64 • QL • BBC • MSX • Atari 8-bit

"IF YOU'RE A HACKER I'LL BE AFTER YOU"

Top computer cop plans tough crackdown

Top computer cop Detective Inspector John Austin last week pledged to track down every computer hacker as soon as the practice is made illegal.

In an exclusive interview with Express the head of Scotland Yard's computer fraud squad promised that he would find the computer hackers. Even the hobbyist bedroom brigade would not be spared the purge, he said.

"Hackers won't be secure in their own homes because they will be committing a crime – it's my job to uphold the law. Hacking is an anti-social act. People don't want them doing it and so it's being made a crime."

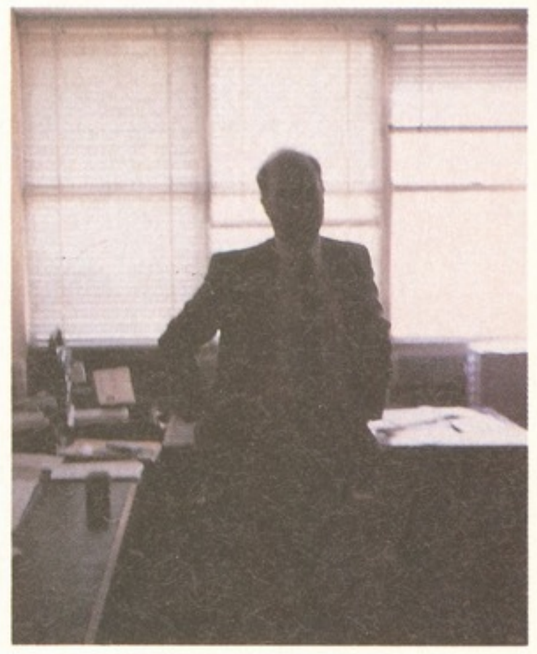
The man who has caught around a hundred computer criminals promised to spare no expense. "We have access to very powerful equipment coupled with people who know what they are doing. You'll need a powerful machine and a quick mind to escape that.

"Hackers all like to think they're very clever, don't they? They think that way because they haven't been caught. But we haven't got great armies of policemen chasing them yet."

Austin was keen to point out that hacking *per se* is still not illegal. However, given international trends and public opinion, outlawing it is only a matter of time.

On tracking hackers down he said: "It's not easy. I can't pretend it is. We all know that hacking takes place in bedrooms or some private place.

"Hackers feel very safe in their bedroom on their machine. They've got their little window onto the world. Mum comes in with a cup of tea and they feel secure. When hacking becomes a crime they won't be secure."



• This man hunts hackers

He added: "Anyone who obtains information illegally will end up in court."

Hacking exodus predicted

Austin reckons his job will be made a lot easier by a mass exodus away from hacking.

"If the anti-hacking bill takes effect 90 per cent of it will stop. It always does if something is made illegal.

"Most people are basically honest: they'll just stop doing it. Most of us don't get up in the morning and decide to commit a crime. But there are those who do. They are dedicated and if caught they will be prosecuted."

How Austin caught the High Street bank crook

His favourite arrest involved the computer manager of a High Street bank. He was siphoning off sums of cash and sending them all separately around the world using computers. All the money then ended up in a bank across the road from his own.

At the time the thief was seeing a girl. She became involved with another suitor who heard of the thief's exploits through the girl. He tipped off the bank.

The bank then contacted Austin. He was reluctant to act on an anonymous telephone call and even more reluctant to go through the bank's computer records. That would have taken six months.

But his team went down to the bank to check it out. Instead of combing through all the records they followed various transactions through – following the movements from the beginning.

"This only took about an hour. It was different because the computer manager who we didn't then know was the thief was standing watching. He turned green at first. Later he turned grey."

How they work

Austin's team is understood to be only three strong.

However, he has access to many technicians inside the police force and outside who are prepared to help. He also has experience of computing having worked in the computer industry prior to joining the police force.

The problem is that a PC expert can't be used on a case involving mainframes so the police have a steady pool of qualified men. If someone unqualified were to testify in court months of work would be wasted.

These technicians are able to pick through a computer system and see if it has been broken in to. Then the investigations begin.

Mr Jones' newest micro appearance

Lucasfilm Games is nearing the completion of its two long-awaited Indiana Jones games .

Both will be completed this month and are based on the forthcoming Indie "blockbuster" The Last Crusade.

One is a graphic adventure, the other an all-action affair featuring the film's best chase and fighting sequences. They are due for UK release when the film opens here in August courtesy of US Gold.

Also on the cards is Loom, a graphical adventure, and a Battle of Britain flight-simulator.

Lucasfilm Games is a division of the leading movie company set up by George Lucas in the 1970s to produce such films as the Star Wars and Indiana Jones trilogies.

It has created some equally impressive computer games, which include *Rescue on Fractalus!*, *Koronis Rift* and *Ballblazer*.

● Indiana Jones: On the road to success...

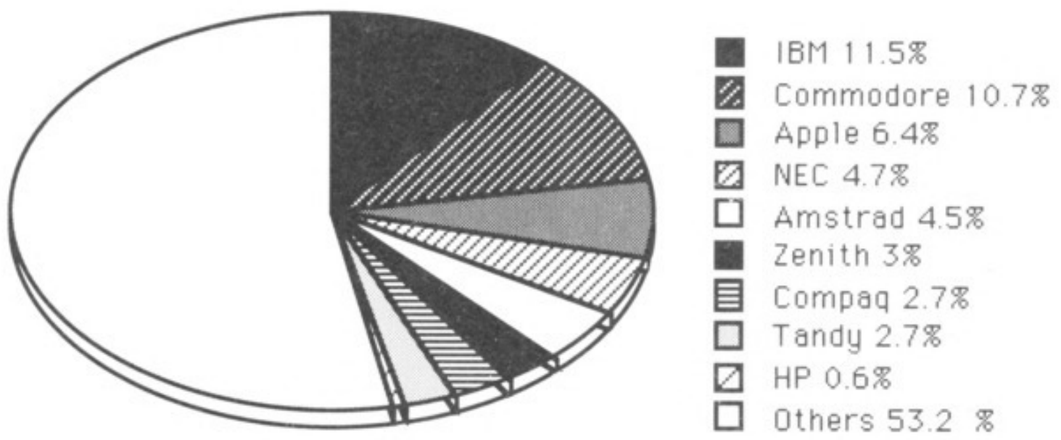
WORLD OF COMPUTERS

A chart highlighting the state of personal computing in the world today has been compiled by leading market research firm IDC.

The first such chart of its kind was put together through 27 offices around the world. IDC in Massachusetts called it "no trivial activity".

The chart relates to all sales of computers which are not multi user machines during 1988. IBM – by far the biggest computer manufacturer in the world — only just scraped by as the biggest seller of computers at 11.5 per cent.

Perhaps surprisingly Commodore comes in second. That is due not so much to the popularity of the Amiga as to huge numbers of people still buying the C64. Atari doesn't get a look in but it's worth noting that without the 64, neither would Commodore.



Apple's large share is almost all down to its incredible strike rate amongst American buyers. Its share elsewhere in the world is comparatively small. That really goes to prove the importance of American computing.

Amstrad weighs in with 4.5 per cent. Its success has mainly been confined to Western Europe, but here the British firm has cleaned up with the CPC, PCW, Spectrum and low cost PCs. Amstrad's PCs are sold into the US but its presence is small.

It's no surprise that the largest share goes to the sprawling masses of cloners and small manufactures dotted around the world (but mainly in the Far East). Still, nearly half of the computers sold in the world come from nine companies.

Stick it to 'em

• Bunch of wagglers

A "Rolls Royce" joystick is to be launched this month featuring a multitude of features.

The Quickjoy V Superboard sports a built in stop watch with LCD display as well as six fire buttons, auto fire, ten microswitches and speed control.

De Gale Marketing – which sells the Quickjoy range – reckons the stop watch will be jolly useful. It cites timing the paths of aliens or adding extra competition in two player games.

And players who lose time in front of their monitors can keep an eye on the watch. Those quick five minute games have a nasty habit of turning into hour long sessions. Quickjoy V costs £19.95.

Console doubles up

Konix has decided to double the memory of its revolutionary console – due out in the autumn.

The Multi System games machine will now boast a memory of 256K. Software developers are reported to have requested the increase. Many viewed the 128K RAM as insufficient. The machine should still cost £199 when it appears.

How to turn your idea into reality...

A new seedcorn fund has been set up which will help people with good technical ideas get their products onto the market.

Kickstart has been put together by Greater London Enterprise and can provide finance from £5,000 to £25,000. The scheme is aimed at individual inventors and young technology based firms.

Such is the extent of GLE's enthusiasm that the economic development group has put aside £750,000 for the drive. "There are hundreds of people in the London area who have worthwhile technology based plans. We're looking for people who have been unable to gain access to conventional finance or backing for their ideas," said GLE's Tony Millwood.

He suggested that the scheme could be taken on elsewhere in the country and in Europe: "They will be keenly watching all our efforts," he added.

Any applicants will have to show technical competence as well as product potential. Also, the ideas have to be realistic enough to be marketable.

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ARCHIES SAVE THE DAY FOR ASPIRING DESIGNERS

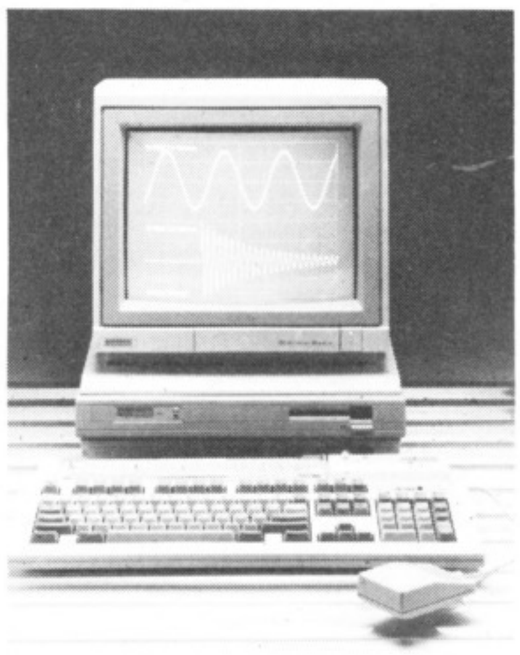
A young student's campaign to learn Craft Design and Technology on computers has won her school a complete facility kitted out with 12 Archimedes computers.

The 15 year old pupil Emily Holt has been campaigning for a CDT facility for the past four years. During that time she had lobbied various governmental departments as well as industrial giants such as IBM on behalf of the Camden School for Girls.

A collaborative project has finally been arranged with the Manpower Services Commission wading in with the help of Acorn and the Camden Consortium. A total of 12 Archies plus four Master 128 machines have been installed in a special hut adjoining the school. Apart from being a leading light in education the Archie is also renowned as a capable design tool.

"We've been fighting for the past four years because we wanted a proper facility to learn CDT," Holt explained. "We had to go to industry and get help, machinery or money."

Holt, along with the other 34 students who study CDT, had been forced to walk half an 'hour every day to a nearby school.



• Design of the times: Archimedes for CDT

COMMENT

Russian to a new age

There is something comic about the idea of KGB inside men coming to spy at computer shows.

You can imagine them back at their apartment in a Moscow suburb enthusiastically going through their plastic bags, ignoring the leaflets on spreadsheets, new accounts packages and hard disk directory managers, and instead proudly showing off cut-price joysticks, *Zak McKraken* T-shirts and end-of-line Spectrum cassette games to their paymasters. Of course they'll pay for it all when the junk mail starts arriving at the address they put on their registration form...

The Eastern bloc needs the spark of chip technology to jump-start the various economies back into action, and the more information they can get about the computer in the capitalist world the better. Mikhail Gorbachev was rather more interested in looking round the Case Computer Factory in Watford on his recent tour than Buckingham Palace.

The way is open for British computer companies to seek out business and joint ventures in the East. Already in Czechoslovakia the Amstrad – the only affordable make of computer in the form of PC and PCW – is becoming a status symbol and everyone in the better off suburbs of Prague wants one.

Of course it's not as simple as launching a market assault on France or Spain; there are a thousand stages of red tape to plough through to do business with the East bloc. But for the companies willing to put in a lot of groundwork, there is a computer-hungry market there – one that, in population if not economic terms, is bigger than the States.

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An alternative summer pastime

• Alternative's seasonal boss Roger Hulley: Any conversions?

With the hot and deliciously sweaty months upon us it only seems logical that the best thing to do is... play rugby.

Northern budget firm Alternative is due to pass *Rugby Boss* onto 8-bit gamers at the price of £1.99. This is a sequel to the earlier *Soccer Boss* - the style of game doesn't take too much imagination.

Still, whilst we all know rugger isn't a summer game Alternative isn't as daft as you might think. Last November the firm scored a hit with *Graham Gooch's Test Cricket.*

Computer ends animal harm

A computer has been developed which could save thousands of animals' lives.

Developed at Manchester University the BioEngine computer system may be able to replace testing drugs on animals. It can mathematically predict the behaviour of molecules which are exposed to various drugs.

Most chemical manufacturers are searching for away of designing drugs on computers rather then endlessly testing them on animals. The BioEngine is to be marketed with these companies in mind.

Times of Law

Legal eagles have been at loggerheads for years over the rights and wrongs of software protection.

But now a massive two-volume analysis of all major cases in the US has been launched with listings of precedents. Published by The Bureau of National Affairs the resource is likely to, at least partially, clear up abiding confusion.

Attorneys Carl Sherman and Hamish Anderson have put the Computer Software Protection Law together. It discusses software and the law as well as a multitude of baffling legal references.

This one's not for your average book buyer – it costs £300. Just in case you're interested orders can be made on 01 222 8831.

MacWorld's UK debut assured

If you're thinking of dabbling with the magic of Macs then get your diary out.

MacWorld Expo – America's big Apple show – is coming over to Europe for the first time. Two yearly exhibitions are held in San Francisco and Boston attracting 70,000 visitors between them and more then 2,000 exhibitors.

MacWorld Expo will be held from Tuesday 23rd until Thursday 25th January at the London Business Design Centre in Islington. Details on 01 831 9252.

'The most powerful PC in the world'

A machine claimed to be the most powerful PC in the world was launched last week in San Francisco.

PC giant Compaq unveiled its Deskpro 386/ 33 to astonished onlookers. The computer's specifications make it more powerful than many mini computers and a plausible replacement for mainframes.

Deskpro 386/33 is based on Intel's new 33 Mhz version of its 386 chip – said to be more than 30 per cent faster than other versions. Compaq isn't pulling its punches.

The US firm is also touting it as the world's most expandable machine. Up to 1.3 Gigabytes (1,300Mb) of fixed storage data can be fitted internally and up to 2.6 Gigabytes can be added via an external fixed disk expansion unit.

Compaq is going as far as predicting that super powerful desktop PCs will replace mainframes and minis over the next 20 years. The new machine will be used for complicated computer aided design (CAD) and intricate software development.

The Deskpro weighs in at a hefty entry level price of more than $10,000. However, Compaq says that given its power (compared with higher end and substantially more expensive machines) it will mark a reduction in the cost of computer power over the next decade.

• DeskPro 386/33: Mainframe beater

This Parrot has deceased. It is no more.

Floppy disk manufacturer Parrot has finally gone bust after some five years.

Debts are reckoned to be in the area of £8 million. Much of the firm's business had come from selling moderately low cost blank disks but problems have dogged the Welsh company from the beginning.

Parrot was originally set up with backing from the Welsh Development Corporation.

Matching Accessories

Ever wanted to load or remove a desk accessory on your ST without disturbing the program currently running? Well Multidesk allows you to do just that, with you given complete control of your desk accessories. Costing £29.95, Multidesk claims to be compatible with 99% of ST desk accessories and works with the new DOS 1.4. Further details from ISM on 0983 864674.

Incredible bargains

In an unashamed piece of self-promotion meant to jack up interest in its Classified Ads section, Future Publishing – responsible for *New Computer Express* – today claimed that it offers 'the best bargains in the history of computing'.

A spokesman for the company said 'at only £5 for an insertion of up to 20 words they represent an incredibly efficient way of getting your computers sold, your bulletin boards advertised or your old software shifted'. The bargains start on page 46.

Ultima hat-trick

Bargain-hunting adventures can now pick up the classic *Ultima I, II* and *III* role-playing games on a compilation package for C64 (£24.95 disk only) and PC (£29.95 5.25" disk only).

SPIES ADDICTED TO UK COMPUTER SHOWS

Next time you go to a computer show you could be standing slap bang in the middle of high level espionage and intrigue, it was claimed last week.

A number of Soviets living in the UK allegedly never miss computer shows and science exhibitions. They stuff their bags with as much documentation as possible, and then send it all back to the Soviet Union.

It is being claimed that some 1,500 high tech spies are circulating in the UK. Once the information is gathered it is sent back to Moscow to be pored over by Russian scientists.

It is well known that the Soviet Union is keen to tap into Western computer technology – its own developments aren't much more advanced than American technology of the 1970s.

Indeed, the Soviet Union can only legally buy low level technology such as simple PCs.

It is also being suggested that MI5 knows which "spies" are interested in which aspects of technology and they keep tabs on their movements. Computer magazines sent to the Soviet Union are also read avidly as scientists pick up tech tips.

Allegedly, multi million pound deals are dangled in front of computer firms on the condition that boffins get a look at the blueprints. Once they've got all the info the deals are dropped.

• Russian around: Soviets like to look at everything on show

Gem of a deal

If a university bought a site licence for Sapphire's DataEase *relational database system last week it would have cost them £9,520 for which 16 people could each use the system.*

If a university buys a site licence next week it will cost £195. Sapphire cut the cost because DataEase *"is now firmly established as the leading database in the classroom. We are offering them the opportunity to run their administration more efficiently".*

CHARTS

Sorry, but the games charts aren't appearing this week due to the time difficulties imposed by last Monday's bank holiday. They'll be back next week.

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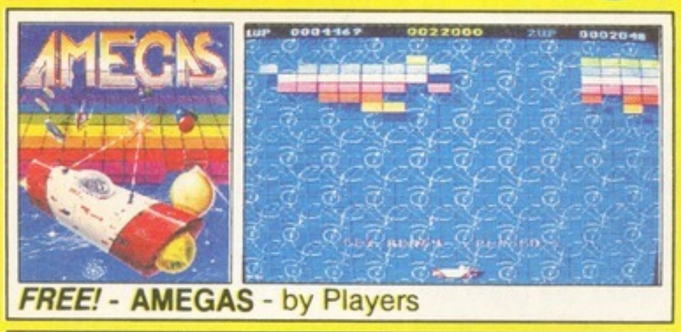

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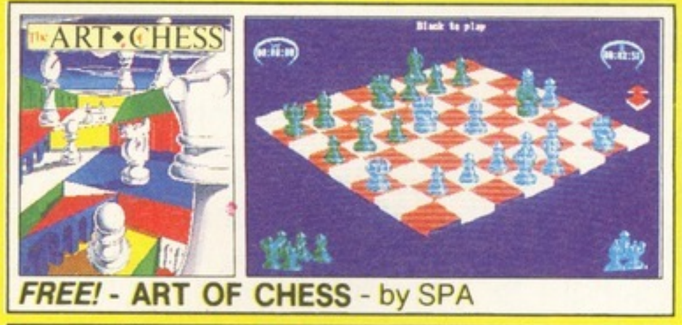

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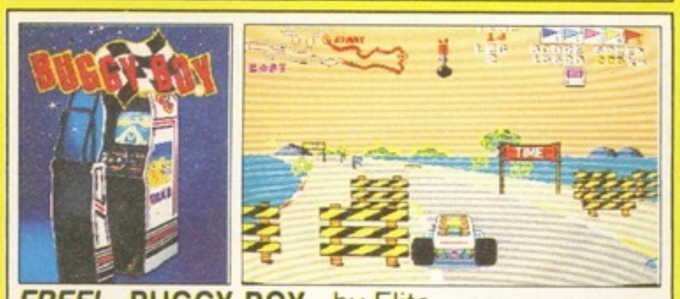

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Not exactly renowned as a sound micro, the PC now has a stab at musical success with Activision's **Music Studio.** ***Rik Haynes throws away his CD Walkman in favour of his funky PC... or does he?***

HIGHLIGHTS
- Reasonably priced
- Good introduction to music composition
- Easy to use

DRAWBACKS
- Poor quaility PC sound chip produces indifferent results
- Needs a MIDI interface and musical equipment to be useful

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Features

Using the musical tools provided with *Music Studio* you can create, edit, and play back compositions using standard musical notation. You can also use different instruments (even altering their sound for your own purposes), and adjust all aspects of your tune's playback such as tempo and volume. If you've got your PC hooked up to MIDI musical equipment, you can either record or play back scores through this equipment using the more advanced features of Music Studio.

User Interface

The whole system is geared towards ease of use, from the file requesters to the instrument selection. When composing your tune you can either place notation onto the staff via keyboard, joystick or mouse or use a MIDI keyboard to record the notes directly, and all the standard options for editing your music (cut, paste, etc) are there as you would find in a word-processor. The whole system runs under the DeskMate operating system to make disk file operations simple.

Documentation

The 90-odd page manual accompanying *Music Studio* is an informative read, split between setting *Music Studio* up, a tour guide of its features and a reference section for the more advanced user. The only quibble comes in its dumb-witted American-ese text.

Verdict

While we still believe it will be some time before the PC becomes standard equipment for any budding house music DJs, *Music Studio* is a step in the right direction. For the price, it's hard to beat its selection of easy to use features, and its a great music composition educational tool, a sort of musical word-processor – but it's not going to get your tune to number one using the PC's built-in sound facilities!

✪ ✪ ✪

• Music Studio 3.0 screen – split between menu bar (file and edit commands, etc), work area (staff where you place your notation) and control section (tempo, play back etc)

MIDI to measure

Despite the PC's slow start in the micro-music area – behind the ST and Mac in particular – there are now several MIDI interfaces and associated software packages available. Prices for a MIDI interface will cost around £150, while more sophisticated MIDI sequencing and voicing software starts at the £75 mark. The "industry standard" PC MIDI interface is the Roland MPU-401 (£250), but the Passport PC MIDI interface Model P-4001 (£150) is highly recommended, including its own microprocessor to handle timing, sorting and MIDI data buffering, thus freeing your PC to use the MIDI software more efficiently and quickly. Further details from music specialist retailer MCMXCIX on 01 724 4104.

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Paging service

Andy Storer has designs on the office PC as he reviews Creative Technology's new low-cost DTP package...

MicroDesign II ● PC £75 ● Creative Technology (Tel: 0889 567160) ● Also due out on Amstrad PCW

Using monochrome CGA or Hercules graphics, *MicroDesign* includes many features of DTP packages – text editing, typesetting, graphics import and handling, different fonts and WYSIWYG – but is essentially a Page Designer.

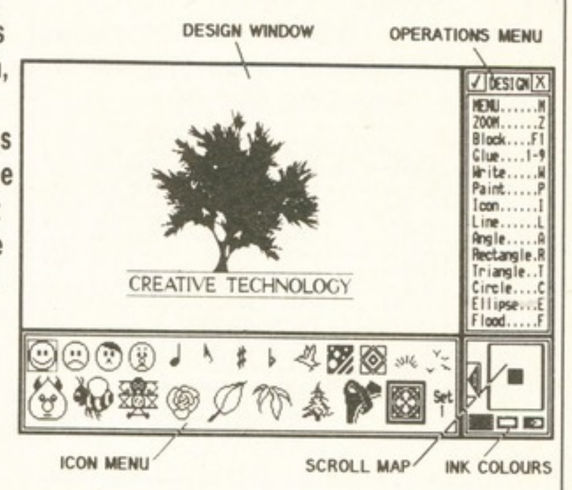
As such, it's not possible to have more than one page on screen or in memory at any one time, so designing a document requires you to produce left and right hand page templates. Although the package can produce screen pages in two modes – low resolution for users with 512k RAM and high-res, which gives users with 640K or more four times the resolution – unfortunately, neither mode allows you to see a whole page on the screen at one time, unless you have a Hercules card, since even lo-res uses twice the amount of pixels you can display with CGA.

To get round this problem, *MicroDesign* allows the user to see and edit the page at three different scales. Layout, which displays the whole page without fine detail, Design, which windows in on an area of the page showing detail at a scale suitable for drawing shapes and patterns, and Zoom, which magnifies a page area sufficiently to be able to change individual pixels. Using a combination of these three scalings, graphics and text can be precisely positioned, moved, copied or erased, saved to disk and reloaded. Once finished, the material can be output to 9-pin or 24-pin dot-matrix printers. Only bit-mapped graphics are supported for laser printer output.

Between the lines

The *MicroDesign* screen is divided into four areas. A main window shows the current state of layout and also acts as a zoomable area for the magnified scales of Design and Zoom. Below this is the text editor area which doubles to show the current icon and font set. On the right of the bottom window is a small area acting as a quick keypad menu in Layout mode and ink options or a scrolling map of the full page in Design mode. Above this is the main Operations menu, a mouse controlled pull-down system with associated sub-menus.

Navigation between modes is pretty swift, although it seems best to work in Design mode most of the time so you can get a good look at the text, icons or graphics you're manipulating. The view from Layout mode is just too dense to be of any use other than for the overall balance of layout. Up to 8K of text can either be typed directly into the bottom window or loaded as ASCII before being copied in whole or part to the main window. If your text limit is over 8K, *MicroDesign* loads the remainder from disk – so it's sensible to compose articles or whatever in some other package rather than within *MicroDesign* itself if your requirements are likely to involve weighty chunks of copy.



• Microdesign's Design Section, containing the drawing options – just one of the three scales at which the page can be viewed. The main part of the screen forms a 'window' onto part of the page

Worth the Lay-out

Apart from the 24 supplied icon banks, which include electronic and musical symbols besides a range of textures, borders and shades, there are also 21 fonts available. Text can be rotated and reflected as well as being reduced by half or doubled in size. As this won't enable you to have enough control for precise sizing of text, the initial design of the page template is of paramount importance. As such, *MicroDesign* is a cut-down DTP package in that it delivers what it sets out to achieve, enabling you to design pages. But then for £75 you won't be complaining.

✪ ✪ ✪ ✪

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A713

MIDI to measure

Despite the PC's slow start in the micro-music area – behind the ST and Mac in particular – there are now several MIDI interfaces and associated software packages available. Prices for a MIDI interface will cost around £150, while more sophisticated MIDI sequencing and voicing software starts at the £75 mark. The "industry standard" PC MIDI interface is the Roland MPU-401 (£250), but the Passport PC MIDI interface Model P-4001 (£150) is highly recommended, includi cessor ing and thus fre MIDI so and qu from m MCMXC

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PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

CROSS: THE SPECTRUM

I must warn readers about the trouble I had in obtaining a Spectrum +3 that works.

My first machine went well for 10 minutes, and then packed up because of a "loose ram" (Dixonspeak). Anyway, I took it back and, to be fair, Dixons replaced it without any fuss.

The second machine would not even power up, so I took that one back as well. I tried again, and this time I got the man to check it in the shop. The machine worked, but when I plugged it in at home, all went well until a game with sound loaded. As you might guess, the sound chip was either missing or broken. By this time I was really peeved, so I took the damn thing back and demanded my money back. Again, with no fuss, they refunded it and I decided to go to Boots on the off chance of finding a working +3 there.

They told me that a whole batch had been sent back to Amstrad because they were faulty but I could have the working demonstration model in the shop. I took this home and it refused to work.

I find paying £199 for a computer that does not even work slightly irritating. Don't get me wrong, the +3 is a good machine if you can find one that works. In the old days, everyone criticised Sinclair for poor quality control but Amstrad win hands down with this. In sheer desperation I spent £400 on an Amiga, and it has never once failed to power up (touch wood!). I am pleased that Commodore have not got the same problems as Amstrad and only hope that the price of games comes down.
Richard Davies, Mold, Clwyd

● ***Well, I sympathise, and can only offer the rather useless information that you were unlucky. No doubt we'll now get letters from Spectrum +3 owners saying how theirs has worked 18 hours every day for the last two years without a hitch.***

AD A BIT

Would it be possible to have an advertisers index on the last page, as many other publications do? Being an unemployed programmer (sob) I usually like to compare specific advertisers' prices before I buy, and an index would make it a lot easier.

Don't change anything else – it's too good!
Keith Ballard, Aylesbury, Bucks

Plus 3. And that's just the number of models Richard Davies had to buy to get one that almost worked...

● ***We'll consider it, though it will be more likely to come when Express starts getting bigger in the autumn.***

PIRACY PT. 3000000

You might be interested to hear about what happens in Turkey. The Turks don't believe in buying software – why pay for what you can get free from the chap up the road who's cracked the protection routines? Everyone in Turkey gets their software like this.

Oddly enough, there isn't much of a software industry in Turkey. In fact there isn't any at all. And no one publishes any programs in Turkish, so anyone with a computer has to learn English. Strange that, isn't it? It would be awful if that happened here.

The solution ultimately has to lie with education, not protection. The new initiative by the Federation Against Software Theft to place ads against piracy is a good step forward. Remember Turkey!
Roger Musson, Edinburgh, Scotland

● ***Agreed, though some might say that a situation which forced anyone with a computer to learn English is a good thing, especially in England.***

SYSTEM CALL

Since I decided to study science at school, I've always trusted my Speccy to perform the one-off calculations I needed for homework. You know the type of thing – linear regression, checking shapes of graphs, small printout tables etc. However, five years on, I'm a Chemistry degree student and am drastically in need of a system revamp.

I've narrowed my choice down to an ST ('cause I can still play silly games on it too), but I need much more than what the Speccy used to do. The problem is that I'd like to submit all my work from a computer to help save valuable time and improve presentation. This means the submission of text, graphs, tables and graphics in colour on A4 paper. Because some diagrams are so difficult to reproduce by hand (like molecular models), it would probably be an idea to invest in a hand-held scanner. All this, and a printer that can handle the output.

Is such a system available? I'm on a budget and would not really want to spend much more than £2,000.
L Wojnarowicz, Coventry, West Midlands

● ***I think the ST is the one to go for – check the ads in these pages for the best buy (it'll be about £300). You'll also want a hi-res colour monitor (£300 or so) a colour printer (try the Star LC-10 for around £240) and a scanner (try Cameron Handy Scanner from £230 on 01 499 9192).***

I'm not sure many people would agree with your idea of a budget though. Perhaps you should apply for Chancellor of the Exchequer?

SOS

I recently put a classified ad in your magazine, and a gentleman rang and offered help. He has subsequently sent me a tape including, I believe, his address as part of a Tasword File. Unfortunately it refuses to load. I have just moved house and so he doesn't have any way of contacting me, nor I him.

Mark, from the Bridgwater, Somerset area, who contacted Jack, in the North of Scotland, to offer help with Tasword, please phone him on his new number 0349-883438, urgently.
Jack Trollope, Alness, Ross-shire

BULLETIN PROOF

I have read about Bulletin Boards many times but how do I find the telephone numbers for them? I assume with the number of adverts featured that there must be many to support the number of Modems being sold but I have only seen one or two numbers mentioned. I have looked in Yellow Pages under "Bulletin" to no avail.
Michael Brown, Cheshunt, Herts

● ***Well, a lot of computer monthlies have lists of numbers for BBSs. We're planning a feature on BBSs in a few weeks so look out for that.***

PICTURE THIS

Continuing the great photography and computers debate. I don't think there's really a parallel to be drawn between the two. After all what is the main use for a camera? Taking photographs, so obviously it is the result of the photography which is likely to be the main topic of discussion.

However, with micros most people are going to be using something someone

End in need

MYSTERY PRIZE WINNER

Why don't programmers put good end sequences into games? At the moment I think you can split them into four categories.
1 Excellent games – Armalyte or Impossible Mission
2 Good – Io, Hunters Moon
3 Bad – Ghosts 'n' Goblins and Last Ninja
4 Unforgivable – Pacland, Operation Wolf
All the games I have mentioned are excellent games but when I completed Pacland after weeks of trying and found out it just looped back to the beginning. What a waste of time!

I think the lastability of a game is greatly increased by a good end sequence because people will play through the game again just to see the end sequence again.
Colin Fulton, Ayr, Scotland

● ***Lack of a good end sequence shows a lack of structure and planning but it ought to be a vital part of the gameplay. It's something that reviewers often can't comment on because there isn't the time, even on a monthly, to get through to the very end of a game, and so I suspect is given low priority by the writers.***

Anyway, as the writer of this week's prize letter you get a piece of freebie software that we hope has a really good endgame. Drop us a line, tell us what machine you've got and it'll be in the next post.

else has written for the machine. Therefore the main subject of debate is likely to be how the software performs, which in turn is likely to be dependent on which machine it is running. A parallel can only be drawn if the only thing people did with their micros was write programs. So the ST & Amiga debate will continue despite what anyone says. Roll on proud ST and Amiga owners! As editor of Express, you're not going to tell me that these "my machine's better than yours" letters don't make an amusing read, and are an accepted part of micro-computing today.
Ahmad Alam, Toxteth, Liverpool

● ***Well, if you really want to push the analogy too far of course it falls down, but there's still a lot of valid comparisons to be made. You tend to get photographs on the covers of camera magazines more often than cameras themselves. On the other hand, there are arguments on either side, though some might disagree. As to STs vs Amigas, I think both are very good in their own way, and there are things for and against either.***

Ahmad Alam says computers aren't like cameras at all because camera users are only interested in the pictures they produce. You don't get pictures of cameras on magazine covers. Evidently so.

HURRAH FOR THE PCW

I have used all manner of computers and software, some very powerful and expensive. The other day I wrote some articles on a friend's Amstrad PCW 9512. What a practical and good value dedicated word processing package I found it to be.

The monitor is clear and relaxing even at minimum intensity, yet is still sharply defined. The keyboard is full sized and, though it rattles somewhat, is fast, and grows on you.

Locoscript 2 is a bit of a tortoise, but is ever so friendly, with on line help.

It must be said that the printer has a couple of blemishes. It is very noisy, and it eats carbon ribbons. Nevertheless it almost appears to leap into action when the command is given; it is so darned willing. The print quality is excellent.

No wonder Jeffrey Archer loves the PCW 9512.
Mike Coleman, Wimbledon Park, London

● ***Jeffrey Archer never lays a finger on his PCWs; his secretaries do all the typing up. He still writes longhand. If he got himself 'PCW literate', his output would double overnight. Thank goodness he hasn't.***

ASSISTANCE PLEASE

My son is doing a project in school for his GCSE on computers. Would you have any information on the Atari ST drawings, photographs, or anything that would be useful for him.
Iris Evans, Hay-on-Wye, Herefordshire
Sure. Express issue 21 had a feature on the Atari ST. It can be obtained, like other back copies, from Express Back Copies, The Old Barn, Somerton, Somerset TA11 7PY, for 75p inc. p&p.

PILE OF NOB

You said to 'Jumping Jack Flash' that piracy is as bad as stealing, well if this is so then why are companies like Romantic Robot not sued. By the way, keep up the good work Jumping Jack Flash and continue to fight for the rights of the FOSP (Federation of Software Pirates). I'm behind you all the way.
From The Amazing Flying Brothers

● ***It looks like Romantic Robot will not be able to sell their multiface for much longer because of moves in the computer industry, so bang goes your pathetic attempt at making a point. It's a hot day and I'm not wasting any more time on illiterate doggerel from tiresome smeg-for-brains like you.***

D FOR 'DIDN'T INCLUDE THESE'

I have enclosed three entries that I think should have been included in the 'D' section of your A to Z of computing. By the way, I own an ST:
Digitiser (T): this is a piece of hardware which converts analogue signals into digits. One of its many uses is as a video digitiser which allows you to display pictures from a TV, VCR or video camera source.
DIN (T): acronym for Deutsche Industrie-Norm. It is the industry standard for plugs, sockets and cables for interconnecting audio and video equipment. Also used for computers and peripherals.
Downloading (T): the taking of data from a mainframe to a microcomputer. This requires two modems linked by a telephone line. Items of software obtained this way are usually free.
John Nice, Grays, Essex

A REALITY COME TRUE

I was delighted to read in issue 28 that the low-cost version of the wonderful Acorn Archimedes was not a myth, but in fact reality. The Archie range must be the best series of computers ever released, especially with the advent of RISC OS last April.

The A3000 at £750 isn't really overpriced when compared to its nearest competition, a 1 meg Amiga System, which costs £550. True, this is two hundred quid cheaper, but just look what you get for that extra £200: 8 channel stereo sound (twice as good as the Amiga's, and the provision of two internal speakers means you can use ANY monitor and still get the stereo effect), faster and much more reliable disk drive, good CGA MS-DOS compatibility, a better keyboard, 32 bit architecture giving unbelievable operating speed – at least 5 times faster than the Amiga, and the BEST operating system & BASIC on ANY machine, Risc OS 2.0 & BBC BASIC V.

One of the most annoying features of computers such as the Amiga, ST & PC is the (agonisingly, on the Amiga) slow disk bootup required before you can even type HELLO. Having the OS & BASIC in ROM is not only much more convenient but also standardises it across the range; all Archies use the same BASIC, so software can safely assume that it is there to use. And to anyone who thinks BASIC is a rude word, the Archie BASIC is faster than 8 bit machine code, and all the Archie's features are readily available from it, unlike the Amiga.

Acorn Computer certainly have a winner on their hands with the Archimedes. I wish them the best of success with it.
Joel Grounds, A loyal Acorn Archimedes Enthusiast, Llanfairfechan, North Wales

● ***Nice machine but I still think it's overpriced.***

Anyway, the news for Archie owners is that we're starting an Archie column next week, alternating with the Atari 8-bit.

Snippets

SPACE SAVER

...Oneof the mostinfuriating things about the Amstrad PPC 512 isthat even ifyou thump the spacebar hard you still can't help finding the wordsjoinedup!
Mike Coleman, Wimbledon Park, London

● ***Must be one of the German-made ones.***

DOWN WITH KEN

No more Ken Mosley please. His humour is nothing except offensive, and hardly merits an airing in our magazine...
D Ward, Thamesmead, London

...I have just finished reading Ken Mosley's article on page 54 of your magazine which I have to admit is one of the most warped piece of journalism it has ever been my misfortune to read...
David Berry, Halesowen, West Midlands

DOWN WITH BOOKS

I'm sure there are a lot of computer bookworms out there so why isn't there a fuss for budget computer books?
Y F Mayat III Jnr

● ***Computer books don't sell in enough numbers to enable budget prices unless they're very generalised. But we'll keep an eye open for ones that don't cost twenty quid apiece.***

WHAT A JOKE

...I noted the devastating news (Back page, *Express* 28) that Tom O'Connor has lost all his jokes to a disk wipe out. What a sad loss, will the comedy industry ever be the same again?
Dave Newton, Bolton, Lancs

● ***Don't worry, you'll be hearing the same old jokes from Jimmy Tarbuck, Frank Carson, Jimmy Cricket, Bernard Manning...***

• That universally liked, honest, hard-working, and well-respected favourite of the thinking person – the PCW 9512. Don't know who the chap trying to use it is (Hurrah for the PCW)

Atari 8-bit – the latest

● **Here are more of the people who've written in requesting an Atari 8-bit column – OK, OK, you've got it!**

● **The Atari 8-bit column will be alternating with the Archimedes column for the first few weeks.**

Alan J Gamble, Linslade, Beds; I J Smith, Milton Keynes, Bucks; Ken Jagger, Leeds, West Yorkshire; Arthur L Morris, Tregaron, Dyfed; Trevor Briscoe, Washington, Tyne & Wear; Stephen Banks, Upminster, Essex; Ron James, Preston, Lancs; G W Lord, Hebden Bridge, West Yorkshire; Thomas Richard Lee, Gloucester, Glos; Mr Ron Vass, Maidenhead, Berks; Colin Hunt, Poole, Dorset; M Cooper, Chelmsford, Essex.

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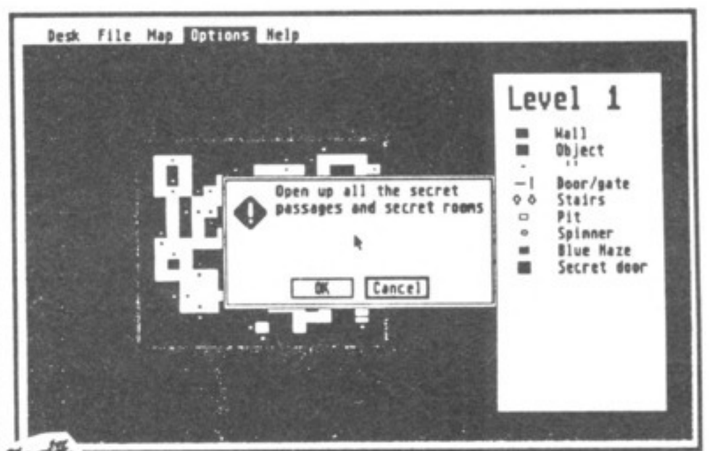

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GOING GOING GONE

Everybody's looking for a bargain. When did you ever buy an item from the first shop visited? How many times have you rummaged through every shop in the High Street to find the cheapest price on a much-wanted bit of kit?

But this has to be the bargain hunter's dream. In among the endless boxes of PCs and printers at knock-down prices there are incredible bargains waiting to be pounced on – if you can keep your cool. Jerry Glenwright guides you through the all-action world of the computer auction...

AUCTIONS

EXPRESS GUIDE

What do you do if the High Street box-shifters don't have the computer you want at the right price, or if you've examined *Express* classifieds every week for a month and still haven't found what you're looking for?

An auction could be the answer. They don't exist merely to sell Old Masters and a few sticks of Chippendale, but cover all kinds of electronic bits 'n' bobs. Almost every month, there will be an auction of computer equipment taking place somewhere in the country and you may be able to find the most incredible bargain.

The auction usually takes place on the auctioneers' premises or in a hired hall such as a church or college lecture theatre. Prospective buyers are allowed in an hour or two before the auction begins to examine the kit. Switching it on, removing the covers and generally having a poke about and this, by the way, is positively encouraged, so take along a screwdriver and get in amongst it!

The beauty of the auction is that it is diverse. You will see IBM machines which once cost thousands sitting alongside PCWs, BBCs and other 8-bit machines. Most of the stuff is new, though there will be some second-hand equipment there too. There will be disk drives and printers, monitors, modems and software and all will sell at incredibly low prices – unless two or more people have the hots for the same bit of kit. If that happens, and there's a fight for an item the bids can rise to silly heights.

The accountant at the John Russell auction last week talked about two radio-cassette players in the sale. "Although the retail price of the trannies was £19, they went for £22 and £24", he said. There is always such a range of choice that you can afford to drop out as soon as an item reaches the maximum price you're willing to pay; like buses, there'll be another one along in a minute.

Prepare for the auction by sending off for a catalogue before the auction date. Examine it carefully and pick out the items you would like to buy. Visit as many second-hand computer stores as you can. If you live in or around London, then go to the Morgan Camera Company on Tottenham Court Road, which has an excellent range of second hand kit at very low prices. There are lots of other junk computer dealers around the country. Look at their prices, examine the classifieds and fix an upper limit on how much you want to pay.

• Before the auction starts the machines are on display. You should be scanning the catalogue and poking around the machines you're interested in – it's up to you to work out whether they're in good condition or not, and you have no legal comeback if they aren't. They're sold 'as seen'.

• Although there's a diverse range of kit at the typical computer auction, it is the IBM PCs and compatibles that generate the most excitement. If the PS/2 is your idea of a hot machine, then expect spirited bidding because you'll be one of many.

Russell of paper money

John Russell & Co. has been holding auctions of computer equipment for several years. "In the beginning, sales tended to be small, but business over the last year or so is definitely picking up. We get hundreds of punters at each auction now, all after a bargain," said an employee. The auctions also attract a hard core of die-hard faithfuls who attend every sale – "some of us treat the occasion almost as a social event," according to one punter.

Russell holds auctions every fortnight at a variety of venues in and around the capital. The one last week was in the Michenden Hall of Southgate Technical College and started at 9.00am.

The computer equipment for sale was arranged on old school desks, under the desks and piled up in doorways and available corners. The punters were allowed in at 9.00am to examine the equipment and it was easy to pick out the techie freaks: armed with screwdrivers and testing equipment, they pulled apart and generally assaulted any machine, drive or printer within range all under the watchful – but very kindly – eye of "The Security", a collection of nice young men, friendly and willing to help, who keep watch for rogue punters with DEC mainframes under their voluminous coats making for the exit.

• "How much is that monitor in the window?" Soon they'll all be going home with happy owners

• Is your PC/XT system board looking for home? Maybe you have a cardboard box full of bits and want to build your own machine. Bijou and compact, these cases will suit the first time buyer

Something in the air

There's a definite feeling of excitement in the air which is difficult to resist. I found myself wondering whether this month's salary would stretch to a pretty Epson lap-top that had caught my eye, and I was putting it across the machinery with the best of them – shuffling around on all-fours examining printers and monitors, opening boxes and lifting lids.

Snippets of techie-spiel could be heard everywhere.

"It's a five, I tell you, it's definitely a five"

"No, it can't be"

"It is. The early full-height Rodimes are always fives".

The large label on the drive is finally read and the first techie gloats.

"I told you it was a five," (he's talking about the capacity of the drive i.e. five megabytes) "I told you, didn't I? I told him I did...".

Dispute over the capacity of the Rodime hard drive settled, they push off to argue about another bit of kit.

The auction started at 10.00pm. Punters rushing to get the last available seat and everyone else sitting on tables, computers and each other. Finally the hubbub stopped, throats were cleared and the auction began.

John Russell is an adept auctioneer. Smooth and persuasive but never forceful with just the right amount of excitement to rouse the punters. And roused they were, with spirited bidding on every item right from the start.

Trader desk-overy

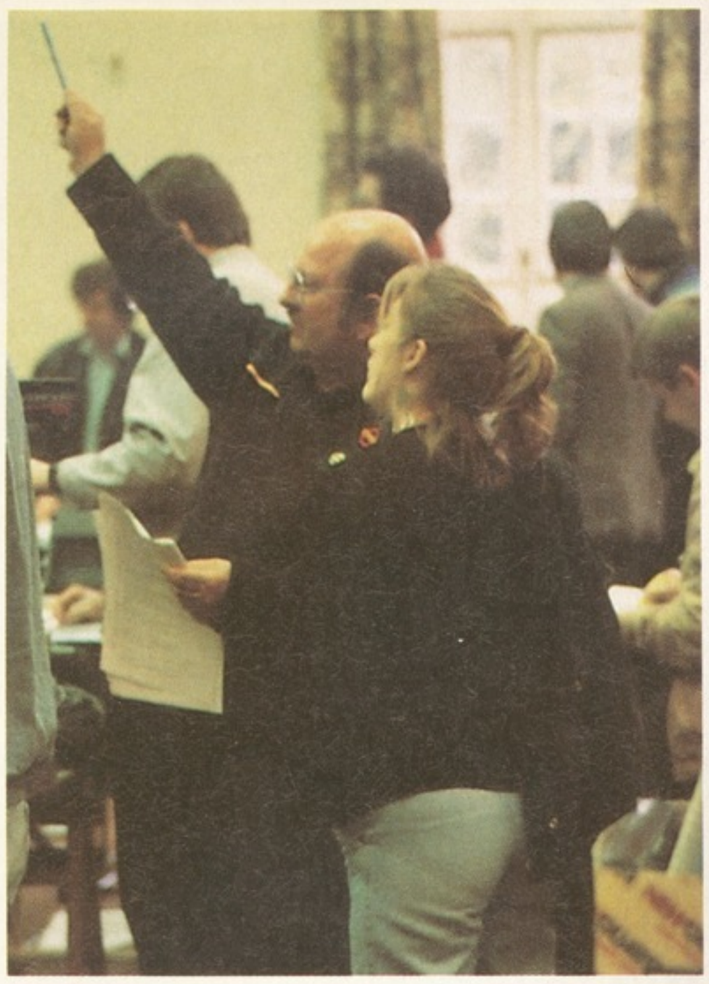
Several other companies are carrying out regular auctions in the UK. One of the most notable is Traderdesk Computer Brokers and Auctioneers, based in Bromsgrove.

Traderdesk holds regular auctions at many venues around the UK. The most recent was in Bristol, where approximately one thousand lots went under the hammer.

The company began operations in January 1988, after the directors Chris and Tricia Wright decided to use the expertise they'd gained at Olivetti – the company where they both worked – to their own advantage. From humble beginnings, Traderdesk now has a turnover of £1 million a year so their expertise is obviously fairly comprehensive.

Interested punters can be become subscribers and have a catalogue of the forthcoming auction so that they can pick out items that they'd like to bid for and be prepared.

If you're interested in a bargain – and most of us are – then you can do worse than pay a visit to the next auction being held near you. Follow the advice, pick your bargains, limit your spending power and go home with a some new kit at a knockdown price – literally.



• Don't worry about inadvertent bidding. The auctioneer can distinguish a sneeze from a bid, so unless you suffer a nervous tic or flail your arms around for no particular reason, the only kit you'll be taking home is the stuff you've bought.

The first item to be auctioned – in fact the first 20 items, and they were all Cumana BBC digitiser/graphics tablets – attracted the attention of the assembled, but it was obvious that they were waiting for the PCs, laptops, printers, etc.

More BBC repeats

Unfortunately, with a collection of like items, an auction can become rather tedious, "lot 19, [yet] another BBC digitiser...". But for the experienced auction-goer, this is the time that bargains start to come thick and fast. After selling ten or fifteen BBC digitisers, the crowd are shuffling their feet and prices are dropping rapidly. Wait until the hammer is about to fall over the kit that's caught your eye and with a flick of the wrist or a curt nod, it'll be yours.

Once the digitisers had been "knocked down" (as items sold at auction are known) and a few other semi-interesting bits and bobs had gone to techie-freaks, the goodies came relentlessly. The Epson laptop that had taken my fancy didn't appeal to the throng and sold for £42 – preposterously cheap, but far too expensive for a poor journo's salary! Soon after, a full-height 60Mb hard drive went for £90 and a very large quantity of BBC computer games sold for just £14. After this there were some very big smiles on happy faces.

Lots 100 to 120 were a collection of 9 x 256K DRAMs. Dealers in the audience straightened themselves and pricked up their ears, whilst trying to appear nonchalant. The first batch of nine sold for £125 – moderately cheap, but by the time 19 batches had been sold the last lot went for £30 – an incredible bargain. All the chips were brand new and guaranteed, and have a retail value of approximately £10 each.

After being pointed out by the auctioneer as a gentleman of the press, punters edged, slipped and sidled up to me to give their opinions and discourse at length about the auction, their machines and life in general.

Kai's the limit

Mr. Kai visits all of the auctions given by John Russell and Co. He views the auction as a social get-together and day out, and can recognise at least a third of the faces in the audience.

Although happy to talk about his experiences, he was reluctant to tell me his name. His wife doesn't know that he visits the auctions and he doesn't want her to know (he returned an ➤

Legal eyed

Regular auctioneers treat their "customers" with kid gloves. Punters who are ripped off don't attend any more auctions and the equipment isn't sold, so although stories of auctioneers who disappear with the takings after selling shoddy goods abound, most are based upon the punter's fears rather than actual events.

In theory, everything is sold as seen, and if you get your kit home and find it doesn't work – tough. You have the rights of a second-hand buyer, and the onus is on you to make sure the kit is worth the money before you buy. If, however, an item doesn't tally with the description in the catalogue, the Sale of Goods Act entitles you to a refund. If it misleads you as to the specification, or if it says the PC you bought is "as new" and you get it home and find the disk drive is worn out and useless, you could demand your money back.

John Russell & Co. (and most of the other regular auction companies) will refund your money if you buy a piece of kit that doesn't work as it should. This policy is unofficial but several members of staff told me that, in practice, it's always used.

hour or so after talking to me and offered "Kai", his middle name).

"I can only buy small bits of kit, the things which will fit inside a briefcase, so that I can sneak them into the house without my wife knowing," he said sheepishly.

He was very anxious to talk about John Russell's auctions saying that they're very popular and very sound – "everyone can buy with confidence. They're safe in the knowledge that they won't be ripped off".

He'd once bought a software package costing £92. After opening and checking it at the auction, he carried it around for several hours until leaving for home. Once home, he discovered that the disks had fallen out of the box and had been lost. Mr. Kai contacted John Russell in the hope that the disks had been found. 'They hadn't, but John Russell still refunded my money!'

Many people attending auctions are worried about buying something before they've checked it, auctioneers disappearing into the night with their cash and the old chestnut about sneezing at the wrong time and going home with the computer equivalent of a grand piano.

Inadvertent bids hardly ever happen. Auctioneers can distinguish nose picking from bid making, so there's no need to worry on that score. Of course if you have a tendency to gesticulate wildly then you may end up as the proud owner of a '60s mainframe but otherwise, forget it.

Checking equipment is up to you. Get a catalogue in advance, arm yourself with a screwdriver and get in amongst the kit. All auctions have a period before the sale to allow the public to make reasonable examinations of the kit. By reasonable, we mean switching it on, opening lids, trying disks etc., not component level stripdowns. Other punters want to examine the stuff too, so be considerate. ●

All this could be yours...

The catalogue of items on sale at the auction extended to 1,441 items. Most of these brand-new products went for about 80% of their normal price, some for a little more, some for far, far less (especially the last of a batch of several identical items, when you could be down to 40% or even 20%). Here's just a taster of what was on offer: would you have found the bargain of a lifetime among the following?...

- Amstrad CPC6128
- Amstrad PCW disk drive
- Amstrad PC1512 system
- Amstrad mouse
- Various monitors
- Rodime 3.5" 44Mb hard disk
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- A carton containing a large quantity of assorted manuals
- Assorted computer interfaces
- Future FX10 workstation
- Canon B-530 fax
- Toshiba T5100 80386 laptop
- Star NB 15 NLQ printer
- NEC P2200 24-pin printer
- Qume daisywheel printer
- Epson GQ3500 laser printer
- Compaq Deskpro 386 system
- Apple Macintosh system •
- *Lotus, Word Perfect, WordStar, dBase II, SuperCalc 4, Ventura DTP* packages etc
- IBM compatible EGA card
- Various boxes of DRAM chips
- Lion Orator modem/ answerphone/ call logger
- Zenith Supersport 286 laptop

A touch of diary here

So you're convinced that the computer auction isn't like *Antiques Roadshow*. You're ready to bid but where do you do it? The crack of the gavel is only a phone call away...

● John Russell & Co. can be contacted on 01 681 5413. Its address is Selsdon House, 34 Selsdon Road, South Croydon CR2 6PB. Its next auctions are:
24th June at the Canons Leisure Centre, Mitcham, Surrey;
29th July at Dacorum College, Hemel Hempstead.
To subscribe to Russell's catalogue send £12 to the above address.

● Traderdesk Computer Brokers and Auctioneers hold regular auctions at several venues around the midlands and south, and can be called on 0527 579120 or faxed on 0527 73828. Their address is Unit 1-8, Manor Works, 168 Worcester Road, Bromsgrove, Worcestershire B61 7AZ.

The next auctions will be held on:
1st July at the British Aerospace Leisure Centre, Southmead Road, Bristol.
Catalogue subscription is £12

● MCD Auctioneers has been going since October 86 and are are on 0276 692260. Their address is Verran House, Albany Park, Frimley Rd, Camberley, Surrey.
Next auction:
3rd June at Sandown Racecourse, Esher, Surrey.

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IBM (CO.): One of the first, and certainly the largest, computer manufacturer in the world. IBM stands for International Business Machines. The company now known as IBM was founded in 1924 by Thomas J. Watson, moved into computer manufacture in the 50s and never looked back.

IBM is responsible for three quarters of all sales of medium and large computers and one quarter of all PCs. The company controls 40% of the overall computer market and makes more money per year than all of the other manufacturers put together and more than the GNP of all but the most advanced industrialised countries. IBM has achieved immense sales by selling into the corporate market and providing defined machine upgrade paths. Once a company has invested a large sum of money in the purchase of IBM machines, it sticks with IBM and buys each generation of the company's computers.

IBM is making a profit of £170 every second. See also ***Big Blue***.

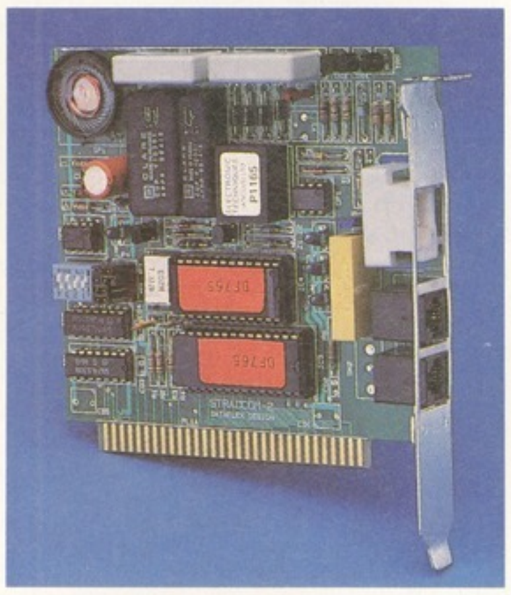
IBM PC (C): Once the home computer market was firmly established – around 1981 – IBM designed and marketed its personal computer, the PC. The original machine used an Intel 8088 16-bit CPU with a clock speed of 4.77MHz. It had 64K of RAM, an MDA graphics adapter, 180K disk drive and a cassette port (hastily dropped!).

The PC was shipped in three parts; keyboard, monitor and system case containing the CPU, power supply, expansion slots etc. From the beginning, the machine was designed to be opened and added-to thereby consolidating its success in the 'serious' market place. The machine sold extremely well but, due to an inflated price, remained in the hands of business users. It wasn't until the release of Amstrad's PC compatible in 1986 that the machine became available to the person in the street.

Nowadays there are a hundred and one small manufacturers marketing their own PC compatibles and it is not unusual for the average home user to carry their computing on a PC.

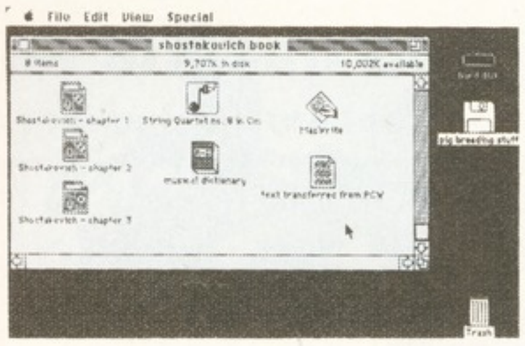
• One of IBM's current range: the company produced the "original" personal computer

IC (T): Or 'Integrated Circuit'. These are the devices which are at the heart of any computer system. The IC is a collection of transistors, resistors and other discreet electronic components etched on to a sliver of semi-conducting material such as silicon. Integrated Circuits can be used to build extremely small, complex electronic circuits, having small power requirements and being very fast. Without the IC, computers today would still require several rooms to house them.



• IC: Collection of electronic components etched onto semi-conducting material

ICON (T): One quarter of the WIMP (Windows, Icons, Mouse and Pointer) operating system. The icon is a pictorial representation of some item of hardware or task. The icons are placed at strategic points around the screen and by moving a pointer with the mouse, they can be highlighted. Once the icon is highlighted a press of the mouse button allows the hardware or task represented by the icon to be selected or performed. Using the WIMP environment effectively negates the need for users to remember obscure and arcane commands in order to instruct the computer.



• Icons: pictorial alternative to simple file and application names

IEEE (ORGANISATION): The Institute of Electrical and Electronic Engineers, a professional body which exerts a marked influence on computer standards and other aspects of the industry (particularly in the States). See also ***ISO***.

IMAGE PROCESSING (T): A method of processing pictorial information by digitising pictures, inputting them into a computer then manipulating them and storing them magnetically or printing them. Many manufacturers are currently marketing cheap digitisers to be used with a wide range of home computers such as the ST and Amiga. See also ***optical character reader***.

IMPORT (T): The process of including text or graphics files produced by one application into another – different – program.

Importing files is usually performed by applications such as DTP programs which import text files produced on word processors and graphics files from paint programs into defined grids within the DTP application.

IMPOSSIBLE MISSION (G): Released on for the Commodore 64, this Epyx game combined platform action with incredible sampled speech developed by a Californian professor.

INCENTIVE (CO.): Famous for its 3-D landscape system 'Freescape', Incentive looks set for success after a series of recent hits and a deal with major league software company Microprose.

• Driller: The first game to use Incentive's Freescape system

INDUSTRIAL ROBOT (T): Programmable mechanical device which is used to automate tasks normally performed by humans. The device can take many forms but is usually an arm which builds, paints or cobbles together. Although unions provided stiff opposition to the introduction of industrial robots in the 70s, nowadays their use is widespread particularly in car manufacturing. The robot can be worked 24 hours a day without rest and doesn't require a salary.

INFINITE LOOP (L): Bad computer programming which causes operation of the program to continuously perform the same subset of instructions. See also ***infinite loop***.

INFOCOM (CO.): Boston-based software house famous for its range of text adventures available across many formats. The games feature intelligent handling of user input, snappy responses and clever plots. However, little is heard of the company at the moment and it would appear that after peaking around 1987, the adventure genre is slipping into obscurity.

INFOGRAMES (CO.): French software company responsible for such as classics as *Captain Blood* and *Purple Saturn Day*.

• The classic Captain Blood from innovatory French software house Infogrames

INFORMATICS (T): The generic word used to describe the subject of information technology.

INK-JET PRINTER (T): A printer which uses – as its name implies – tiny jets of ink sprayed against paper in order to form characters. The ink-jet printer offers significantly improved print quality over dot matrix and thermal printers and is used as a kind of down-market laser printer. See also ***dot matrix, thermal, daisy wheel, laser***.

• Ink-jet printers fall mid-way between dot-matrix and laser printers in price and quality

INPUT DEVICE (T): Any piece of hardware used to input information into a computer. Keyboards, joysticks and the mouse are all well-known examples of input devices, but there are also ➤

Part 7 of the definitive Express guide to computing

• Joysticks are "input devices". Others include keyboards, mice and graphics tablets

track balls, touch screens and graphics tablets (to name but a few).

INPUT OUTPUT (T): Often 'I/O'. Generic term to describe data transfer into and out of computers. Transfer of data between devices such as disk drives, monitors, optical character readers etc., are all examples of I/O.

INSTALL (T): The process of loading an application program provided on one or more floppy disks onto a hard drive, then configuring it for use on that system.

INTEGER (T): A whole number, which can be negative, positive or zero. Numbers like 1.25, 0.37, π, the square root of two and integers are all examples of 'real' numbers. Integers are useful when used as loop counter variables in programs. Using an integer variable greatly improves speed of operation and saves RAM memory. Contrast with ***real***.

INTERCEPTOR (CO.): Formed in the boom days of home computers by a teenage entrepreneur, Richard Paul Jones with more business acumen than actual programming skills, the company nonetheless had a hit with *Dungeon Master* clone *Galdregons Domain*.

INTERCEPTOR (G): Launched in mid 1988 for the Commodore Amiga, this flight simulator shot to fame due to its blend of authenticity, arcade action and ease of use. The game convinced many arcade gamesters of the fun of flight simulators.

INSTRUCTION SET (T): A set of codes supplied by a computer manufacturer for a particular machine or family of machines.

INTEL (CO.): The American company which produced the first Microprocessing unit the NUMBER, a four bit device. The chip was an innovation and was quickly followed by the 8086 then the 8088, a 16/8 bit device adopted by IBM for use in its PC range of machines in the early '80s. IBM later bought a 30% share in the company. Today, Intel have the 80286 and 80386 CPUs in the latest range of PS/2 IBM computers offering unparalleled computing power in the PC business market.

INTELLIGENCE (T): Ability of computers to 'think' for themselves with the aid of some very clever programming. Although this goal is yet to be achieved, many research teams are working on the problem, and the way to intelligent machines seems to rely on 'neural' chips which function in a broadly similar way to the human brain. See also ***artificial intelligence***.

INTERFACE (T): Device which is either attached to or fitted at a later date to a computer to allow it to perform a specific task. Interfaces come in all sizes and configurations for a multitude of tasks. There are interfaces to allow computers to connect to hard drives (SCSI), modems (RS232), printers (Centronics) and musical instruments (MIDI). The original home and small business machines were often severely lacking in interfaces and therefore restricted in their usefulness. Nowadays, machines such as the Atari ST have RS232, Centronics, MIDI and hard drive interfaces as standard.

• Interfaces allow the connection of computers to external hardware – e.g. printers

INTERNAL MEMORY (T): RAM memory inside the computer. The early home computers had between 1K and 16K of usable internal memory. Large scale manufacture of RAM chips meant that in the middle 80s they were selling for less than price of manufacture (if bought in bulk); it was therefore commercially viable for computer producers to include large amounts of RAM and use this as a selling point. Unfortunately, due to trade sanctions imposed by the United States on Japan, RAM chips are now incredibly expensive and there is a consequent shortage. The new 68000 CPU-based machines have 512K of RAM as standard.

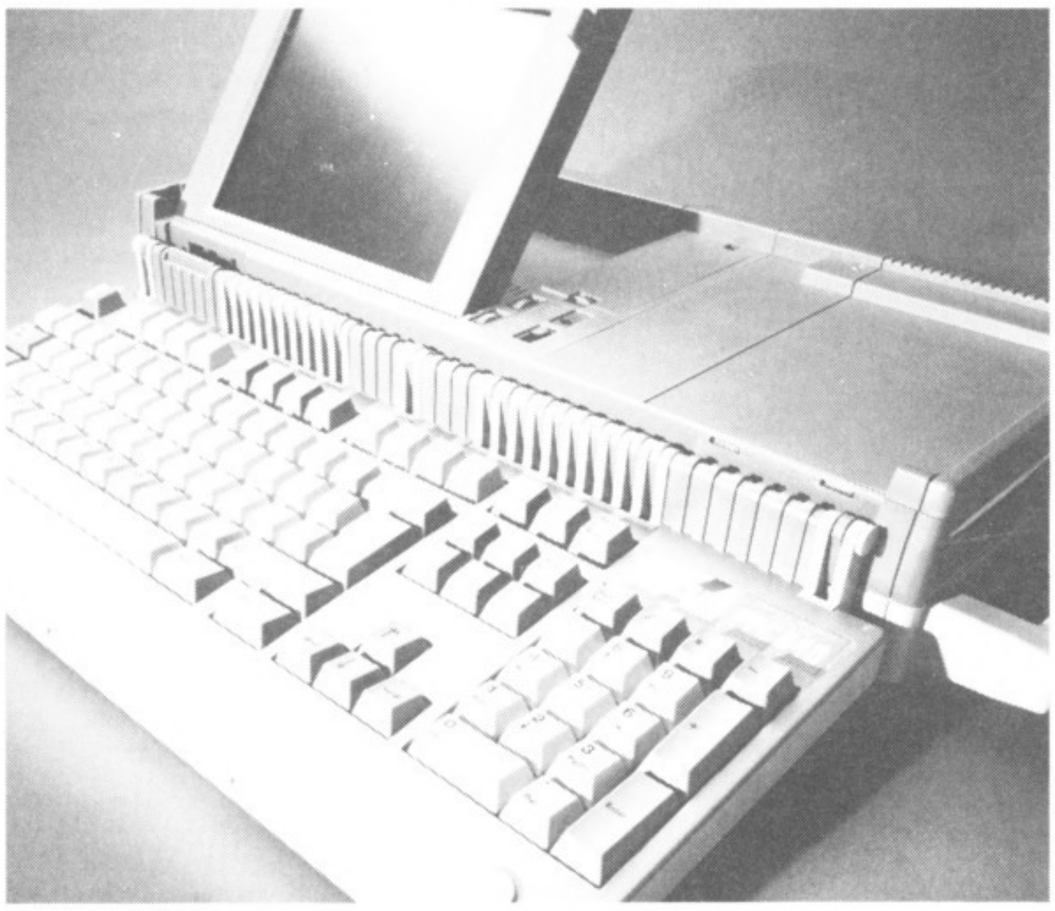
INTERNAL MODEM (T): Modems usually connect to computers via a connection or interface on the computer known as RS232. Because the IBM PC and its compatibles are designed to be opened and expanded (unlike other machines where this practise invalidates the guarantee), it is possible for modem manufacturers to produce a modem on a 'card' which can be plugged into an expansion slot inside the machine, thereby freeing the RS232 port for other uses such as a printer, or a mouse.

INTERNATIONAL KARATE (G): Definitive martial arts kick-em-to-death, originally released for the Commodore 64 in 1985, but now available for a wide range of machines. The game is currently in an IK+ version.

INTERPRETER (L): So that a computer may understand the instructions given to it in high-level language form (BASIC, C, Pascal etc) there are two methods of converting the program instructions to a form the computer can directly understand, and one of these is interpretation. Using this method, each command within a program is changed into machine language and acted upon by the computer *as it is read* rather than when the whole program has been changed into machine language. See also ***compiler***.

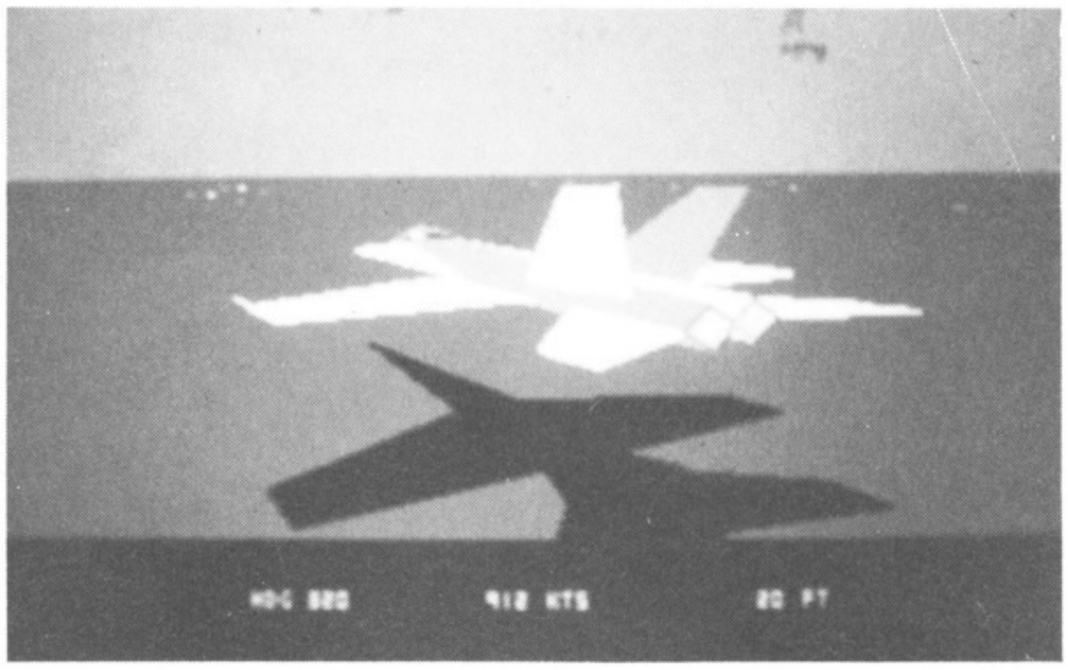
INTERRUPT (T): Whilst the CPU of a computer is processing a piece of information it is sometimes necessary for a device or another operation with a higher 'priority' than the current job to be recognised and dealt with by the computer.

An example is a machine playing a tune whilst moving graphics around on the monitor screen. Every 100th of a second or whatever the program controlling the tune interrupts the processor as it is moving graphics and asks for its next instruction. The CPU abandons the graphics and gives a fraction of a second of its time to the sound, changing a note for example, then returns to graphic processing. Of course this is all so fast that it appears both tasks are being carried out simultaneously.



• Internal modem: Incorporated into many PCs such as the Amstrad PPC 640, rather than having to be connected via RS232 port or interface

ISO (ORGANISATION): The International Standards Organisation. A body responsible for the definition of standards within the computer industry. Most languages and devices conform to the ISO model. ●



• Interceptor, from Electronic Arts: A flight/sim action game which became a classic on the Amiga in mid '88

Key: C - computer Co - company DB - database DTP - desktop publishing G - game GG - game genre Gr - graphics Int - integrated software L - languages P - personalities SS - spreadsheets T - tech spec WP - word processor

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JOIN THE CROWD

Ever felt you're fighting a lone battle to understand the depths of your machine? Ever wished there was someone who could tell you how to poke that game, work that word processor or crack that machine code – or just share a few problems with? User clubs could be the answer. Jerry Glenwright investigates...

Computer users are traditionally a hermit-like bunch, programming until the early hours and making contact with other users via modem in the dead of night when phone charges are cheap. When they do surface, it's usually with bleary eyes, muttering bits of machine code or serial connection protocols.

In light of such behaviour, the computer user group would appear to be rather an anomaly. Micro hobbyists emerging from dark closets to congregate in church halls and the like, share ideas, solve problems, enthuse over bits of kit and generally relate to their computer peers.

Up and down the country there are computer groups covering every possible brand of machine, many that slipped into oblivion half a decade ago, being tended by loving hands. Lectures, guest speakers, machine tutorials and help with hard and software problems are all aspects of the average computer group meeting.

Like any club, the group will usually be run by one or two interested individuals, will be free or have only minimal membership fees and will be (sporadically!) attended by a friendly bunch of men and women willing to help. Bear in mind though that it's interactive, expect to offer help too, or at least muck-in with box shifting etc.

Group mentality

The Starcol Computer User Group is typical. It meets at the back of the Starcol Computer Shop in Bath every Tuesday evening, and last week *Express* was there. The group is organised and run by Verity and Colin who are the proprietors of the shop. The group has been meeting for several years and during an average Tuesday evening anything from five to fifty people will attend the group to discuss all aspects of computing.

The group comprises members from all walks of life, professional programmers rubbing shoulders with ex-car park attendants, and doctors hob-nobbing with avionics engineers and university technicians.

Geoff is attending the group for the first time. He's recently returned after 14 years in the States working as an avionics engineer 'I'm looking for a place to settle down and retire', he said.

• Hardware and software tutorials play a large part at any user group meeting, and it is here that you will gain advice on problems that you may be experiencing with your system or software. Occasionally, guest speakers from within the industry may attend and you'll have a chance to ask pertinent questions and meet the 'celeb'.

• There's room for young and old alike, to gather around and learn something new...

• Women shouldn't be put off attending user groups – after all, computing is too male-oriented as it is

After recently buying an IBM-AT compatible to run a home accounting package, he's decided that he'd like to find out more about software in general and attended the group to be enlightened.

After refreshments, Geoff is deep in conversation with James who is a professional programmer. James began adult life working as a scaffolding erector but gave it up and went to university.

He completed a course in computing, then returned to the scaffolding he knew best, but this time on the other side of the fence – he writes programs which calculate and print quotes for scaffolding jobs.

Keith spent his daylight hours working as a car-park attendant. He went along to the computer group after deciding to buy a machine from Starcol. After talks about desk top publishing he found a hitherto undiscovered interest in – and talent for – artistic layout.

Regular meetings with the group enabled him to learn all about the DTP programs and now, eight months later, he's given up his car park attending and is publishing handbills, leaflets and documents for local businesses.

Chatter is friendly and informal and the group welcomes newcomers – as do all computer clubs. Those 'in the know' seem to form an impenetrable ring when you're new to computing, but then everyone has to start somewhere: the purpose of the club is to help and advise, and with no newcomers it would become pretty stale.

Find out when where your local clubs meets, arrange a free evening for yourself, and get along to the meeting – you won't be disappointed.

The Groups

Computer clubs around the country are presided over by a semi-official governing body known as the British Association of Computer Clubs. The association provides guidelines for user groups and compiles a list of UK clubs for interested punters looking for their local group. The association can be contacted at Banc Y Rhosyn, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB (enclose a sae). Tel 0267 230771. ●

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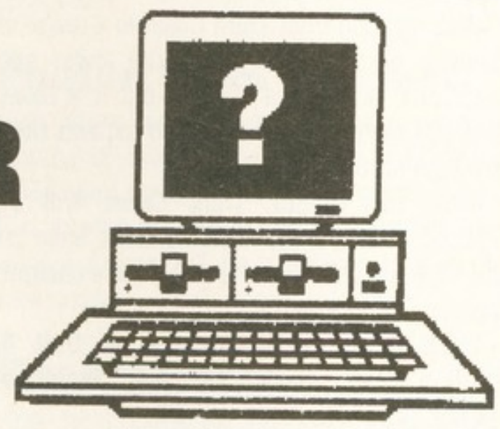

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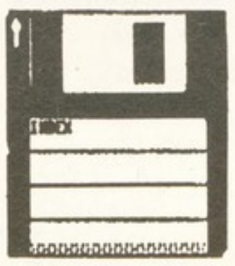

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Let's go all the way

Way, way back... further back even than issue 15... back to a time when combining two issues into one and charging 68p was considered right, Eagle computers of Cardiff impressed upon the idea of a 68020 speed-up board for the ST. That was December 1988. Six months later and there's still nothing. Not a squeek. Will Eagle's board turn out to be another Parsec board or Flair computer?

It doesn't really matter, because Third Coast Technologies, best known for its very reasonable hard drives, is to launch a series of booster boards within the next month. It's still early days and consequently prices haven't been finalised. However, the specification has been sorted out. The simplest – and presumably cheapest – upgrade will be a 16Mhz 68000 processor. This will be a direct replacement for the current 8Mhz-rated processor in STs. Rip the slow one out and shove the faster one in. Easy.

The next upgrade will consist of a board containing a 68010 processor which will fit inside the ST. The 68010 is marginally faster than a standard 68000 as its microcoding is more efficient. There's room on the board for an optional 68881 maths co-processor.

Finally there's the 68020 go-faster board. This is most like the one proposed by Eagle, although there's unlikely to be provision for running the Unix operating system or RAM sockets. There will, however, be room for a 68881 or 68882 co-processor.

Coming soon from Third Coast is a range of memory upgrade boards for the lower end machines. Details are sketchy, but it is likely that 520 owners will be able to expand their machine right up to 4Mbytes.

Later this month, Third Coast will be offering modified Taiwanese tracker balls for the ST. Price will be under £20. That's cheaper than any other supplier.

Third Coast Technologies is at **Unit 8, Bradley Hall Trading Estate, Standish, Wigan, WN6 0XQ** (0257 426464).

GFA on the move

Now that Les Player, Atari's former technical manager, has settled down in his new position as head of GFA Data Media in the UK, he's ensuring that the backlog of GFA products hits the streets.

First to reach the shelves is *GFA BASIC* V3.06E. Apparently this is an update to V3.04 – nobody's really sure what happened to V3.05.

The number of enhancements to the first version of GFA 3 are quite staggering. Bugs galore have been fixed, areas of GFABASIC.PRG and GFABASO.PRG can be patched (which means you can customise boot colours, etc), file reading and writing is greatly speeded up due to an increased cache and a thousand and one corrections to the manual have been listed.

Registered users of ST *GFA BASIC* can upgrade for the price of a blank disk and postage. GFA User at 186 Holland Street, Crewe, Cheshire, CW1 3SJ is handling the updates.

GFA BASIC's current retail price is £59.95.

The compiler for *GFA BASIC* V3 is expected in late June. Price hasn't been decided upon, but is expected to be less than £30. A 180-page manual is to be supplied with the compiler; this is an enormous leap from the 20-odd page offering bundled with the earlier version. According to Les there are numerous compiling options.

RayTrace is another of GFA's products to be held up due to the change over from Glentop to Data Media. The final bugs are being removed, so shipment should be very soon. The price will be somewhere in the region of £40 to £50.

All GFA product is available from **GFA Data Media, Box 121, Wokingham, Berkshire, RG11 9LP** (0734 794941).

Shorts

● The latest STFMs can't be upgraded simply by fitting extra DRAM because the PCBs are fitted with either surface mounted chips or 256 by 4-bit DRAM. The cost of fitting these types of chips is phenomenal, which is why Ladbroke Computing (0772 203166) has designed a board capable of accepting 16 256 by 1-bit chips, thus providing 1Mb of expansion, or 16 1Mbyte by 1-bit chips (giving a total of 2.5Mbytes RAM). These expansion boards will fit STs, STMs and STFMs. The unpopulated board, fitted, costs £60.

● DTV Systems of Elgin, Scotland, can supply you with a desktop video system consisting of an ST, video titling software and a genlock device. You can sample what DTV's ST kits are capable of by sending £5 to **100b High Street, Elgin, Scotland, IV30 1BM** (0343 44581) and asking for the VHS Demonstration Video. The video includes examples of graphics and video software for the ST and shows clips from promotional videos, adverts, logos and titling produced using an ST. The £5 is redeemable on return of the video cassette. A great way to see before you buy.

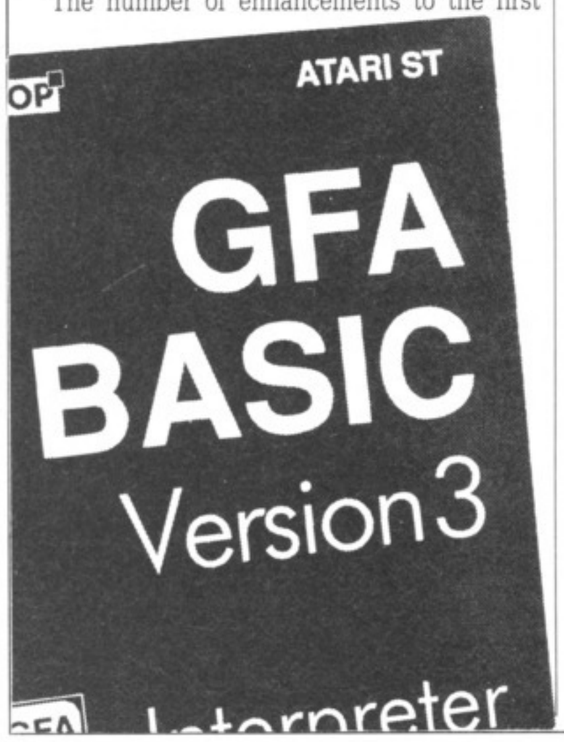
● *Keyword* from Swift Software (061 4560926) mentioned last issue costs £29.95. Anyone ordering the software before the 31st of July receives a a calculator watch worth £4.95.

Adrion McHerriot

Screaming Spectre

Here's a quickie for owners of the superb Mac emulator Spectre 128. After double clicking on the 1SPEC19F.PRG file, you'll be presented with a huge box proclaiming loudly that this is Spectre 128. Move the mouse to the top right corner of the box, and hold SHIFT and the left mouse button simultaneously. Yeeoww!

It's possible to change the screaching Aliens sample for one of your own. But you'll need Replay 4 or something that produces compatible digitised code. The sample must not be over 80K in length and should be sampled at 15kHz. Easy so far. Copy your sample onto the same disk as Spectre and rename the file SPECTRE.SYS to SPECTRE.TMP. Next, rename your sample to SPECTRE.SYS. That's it. You can go back into Spectre and try out your sample.



AMIGA BLIT

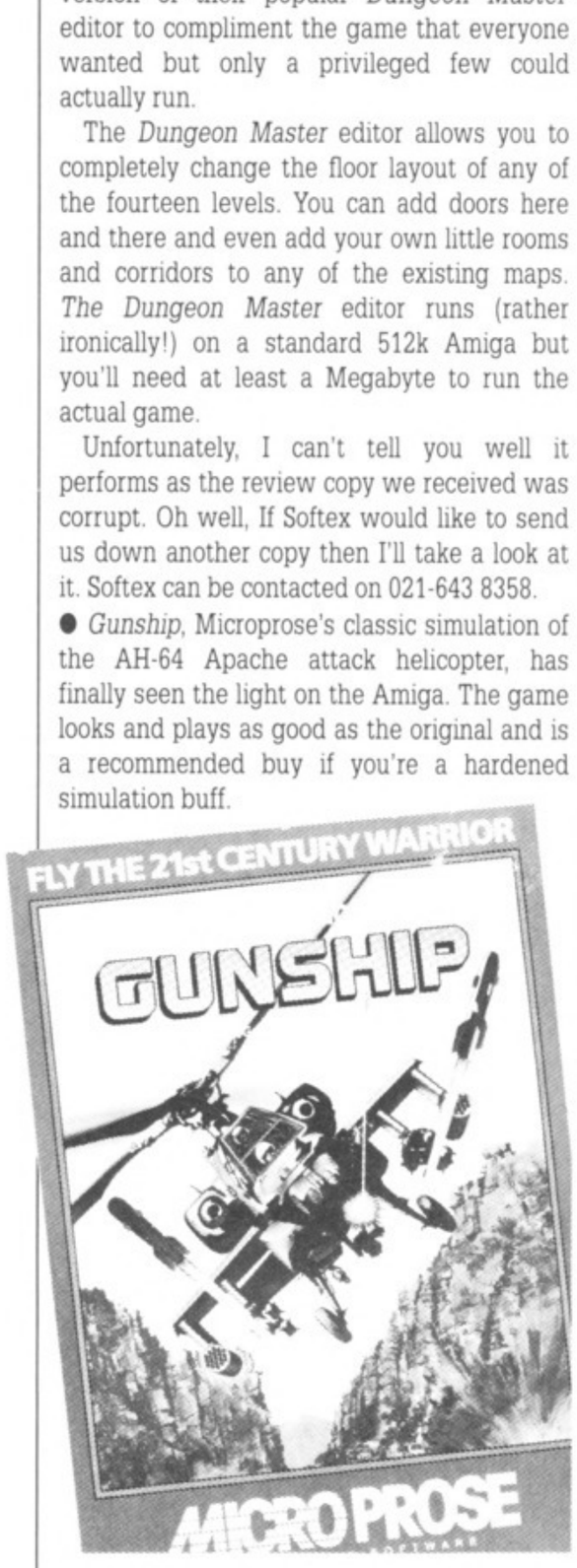
Amiga Scene Update

● Softex have finally released the Amiga version of their popular *Dungeon Master* editor to compliment the game that everyone wanted but only a privileged few could actually run.

The *Dungeon Master* editor allows you to completely change the floor layout of any of the fourteen levels. You can add doors here and there and even add your own little rooms and corridors to any of the existing maps. *The Dungeon Master* editor runs (rather ironically!) on a standard 512k Amiga but you'll need at least a Megabyte to run the actual game.

Unfortunately, I can't tell you well it performs as the review copy we received was corrupt. Oh well, If Softex would like to send us down another copy then I'll take a look at it. Softex can be contacted on 021-643 8358.

● *Gunship*, Microprose's classic simulation of the AH-64 Apache attack helicopter, has finally seen the light on the Amiga. The game looks and plays as good as the original and is a recommended buy if you're a hardened simulation buff.



• Gunship touches down on the Amiga

● This weekend's Commodore show looks set to be the venue for the release of several exciting Amiga products from HiSoft. As well as its current range of software development tools, HiSoft should be launching the Amiga version of its C language interpreter.

Most exciting for me personally is the launch of the developer's version of their classic assembler system, *Devpac*. *Devpac Professional* allows cross development between the ST and Amiga as well as improved performance. All this movement on the assembler scene is finally making the Amiga a usable development system for those of us who can't afford PDS systems. Now all we need is for someone to produce a fast C Compiler that offers the same kind of performance of Borland *Turbo C* running on a '386 PC, and life will be true bliss!

● If you're going up to the Commodore Show on Friday, look out for a certain journalist with ridiculously short hair – it'll be me, matey! If you do clap eyes on me, why not come over and offer to buy me a drink (go on, please!) and then try to flatter me by telling me how much you enjoy *AmigaBLIT* (people who *don't* like AmigaBLIT and expect me to buy *them* a drink, will be ignored!).

● I'm afraid *GFA BASIC* users are going to be very unhappy to hear that the latest news on the companion compiler isn't good. When we recently phoned GFA Systemtechnik, Les Player (he of ex-Atari tech support) informed us that the Amiga compiler will unfortunately not be released until at least late summer.

● As you've probably already read elsewhere, the world's best selling 16-bit magazine, *S T Amiga Format*, is to split. The good news is that not only am I going to be lumbered with the task of trying to sound authoritive as Technical Editor, but every issue will come complete with a free disk jam-packed with the very best in freebie software for the incredibly reasonable price of only £2.95. How can you afford to miss it?

Jason and J San

Popped up to see Jez San and the rest of the Argonaut team last week. The reason? Well, apart from wanting to embarrass Jez San over the total lack of sugar at Argonaut, I managed to get an exclusive sneak preview of its PDS beating assembler system, *ArgAsm*.

After running just a couple of very simple benchmarks through *ArgAsm*, it soon became apparent that what everyone (including myself) had been saying about the system was far from being just idle speculation (and column filling waffle!) – *ArgAsm* really does offer PDS performance, even on an bog-standard Amiga.

When I asked Jez about the algorithms used by *ArgAsm*, it turns out that even PDS themselves will be using Argonaut's *ArgAsm* algorithms in future PDS software updates – what better proof do you need of *ArgAsm*'s capabilities!

For a complete indepth preview of *ArgAsm*, check out the next issue of *ST Amiga Format* (issue 13). *ArgAsm* should be available to the public around late July (when can I have my copy, Jez?).

Photon Paint 2 at last!

Well, after many months of waiting (many months of using *DPaint 3*?), the king of the HAM paint packages has finally arrived – and first impressions seem good. Check out next week's *AmigaBLIT* for a indepth look at the new arrival.

Cheats Corner

First cheat this week is for EA's *Fusion*. When the game starts, get into your ship and fly to the top left hand corner of the first level. Next, leave your ship and drive the assault carrier as far into the corner as is possible and then type 'STONKER'. Finally, get back into your ship and the cheat mode will be active. From now on, pressing 'D' will zip through the weapons available and 'C' will allow you to cycle through all the levels.

The second cheat this week is for Image Works' *Fernandez Must Die*. To get infinite soldiers, pause the game and type in 'SPINYNORMAN' and then restart the game. Fernandez can now be easily wasted.

Thanks to VARK for the above tips (hope you're enjoying the game!).

Jason Holborn

Message Port

Is there something about the Amiga scene which is really starting to bug you (apart from me that is!)? Then why not share your views with your fellow Amiga users by writing in to AmigaBLIT.

Similarly, I'm also interested in any hints, tips or tricks concerning the Amiga that you may have that may be of interest to other Amiga users. Send all correspondence to: Jason Holborn, AmigaBLIT, Future Publishing, 4 Queen Street, Bath BA1 1EJ.

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PC UPDATE

Filodisks

Do you keep details of the files on your floppies? No, it's much too much hassle, isn't it? You've got to display directories, copy out the file names and file lengths and update your records each time you make changes to them. And then, where do you keep the listings you've made up?

Xpedients may have the answer for you. Taking a leaf out of a *Portex* binder, the company's come up with a useful utility called *The Disk Organiser* which will read the contents of your floppies and maintain libraries of the data on disk. You can then call them up, add notes to the entries and print all the data out on plain listing paper or Filofax-style continuous paper.

The pages can then be clipped into your battered pocket organiser and you have a reference to your disk collection bumping along next to your heart. Xpedients can be contacted on 061-480 1952 and you'll be asked to part with a mere £29.99 inc VAT for a copy of the program, a starter pack of paper and a plastic organiser. If you're into leather (organisers), you'll be asked for an extra £10.

A tangled web

And they wonder why it takes so long to do a simple thing on a computer? I was asked to put together a letterhead the other day for a writer's group to which I belong (darkest secrets coming out now), and set to work with a handheld scanner and a book containing medieval engravings which are well out of copyright. I wanted to add some gothic text to the illustration and realised that GEM's Swiss and Dutch fonts would hardly fit the bill.

OK, I thought, I'll use the *DR Halo DPE* editor supplied with the Ajwad scanner, which has a 300dpi bitmapped Gothic font. I tried to install the editor, and was asked if I wanted to use expanded memory. I have two megabytes of memory on my PC and knowing the amount 300dpi bitmaps can use, I thought I'd better install it. This involved rewriting AUTOEXEC.BAT and CONFIG.SYS files to get *QEMM*, the Quarterdeck expanded memory driver, working. Once this was done I got inexplicable "internal stack errors" which crashed the system. Assuming this was a conflict with some of the TSRs on my system, I wrote a variation on the CLEAN batch file I explained in this column a few weeks ago, to remove them and still install the QEMM driver. This worked and I got *Halo DPE* working, though with a fairly small page size.

I scanned the graphic into *DPE*, cleaned it up and saved it as an IMG file, for later use in *Finesse*. I produced the text I wanted with DPE's Gothic font and printed it out – a good, bold font. I saved this as an IMG file, too and left *DPE* in favour of Finesse. *Finesse* wouldn't recognise the IMG files produced by *DPE*.

Remembering that DPE could save files in TIFF format as well as IMG, I returned to it and tried to reload the IMG files. *DPE* can't load IMG files! Not to be beaten, I rescanned, retyped and resaved as TIFF files. *Finesse* recognised the TIFF files and promptly converted them to IMG files for its own use! In doing so, it converted the good, bold Gothic font to a poor, spidery thin one, but no matter.

I sized the elements on the *Finesse* page and put a border round the letterhead and the page. The border round the letterhead was a double line on the screen, but printed as a single line on the LaserJet. In fact, all the double borders in *Finesse* print as single ones on a Laser. The default page margins in the program are half an inch all round. When printed, though, the page is thrust to the left and well down the paper so that its bottom bleeds off the edge. The final centralised image uses borders of .03" top, 1" bottom, .6" left and .3' right. The total time taken for all this hokum was just over five hours. No wonder the Mac is increasing in popularity.

A simple poser

If Zenith's version of DOS can support up to four floppy drives, and its basic SuperSport model can link directly to at least three of them, why to you need to spend up to £100 on a Communicator card for a desktop PC and jig DOS with a special device driver to run more than two?

The logic behind this disparity seems to be that "normal" desktop PC users never need more than two drives and that "special needs" cost money. So what if you have a single PC and need to be able to run 360K, 1.2M and 1.44M drives? You get a lot of guff about relocating drive addresses and Communicator cards. Doesn't anybody make a single or twin floppy controller with a link-selectable drive address? It shouldn't cost more than £40 and should be compatible with any of the above drives. Let me know and get free publicity.

Printer switch P.S.

I'm indebted to Mr J L Davison of north-west London who took the trouble to send me a fax containing a page out of the HP LaserJet II manual which clearly states that manual switchboxes aren't recommended for their printers. As guilty as anyone who hasn't read the ***ing manual, I'm still mystified as to why H.P. printers should be different. To save any possibility of mishap, however, I've returned the manual box (excellent customer service, CompuAdd) and am looking around for a reasonable electronic unit instead.

Simon Williams

• The finished letterhead, less double-line border and chunky Gothic text

CPC centre

The CPC Job Centre

This week *Express* is proud to present two opportunities for budding computer boffins to break into the world of professional software publishing. So as soon as you've got those dreadful exams out of the way – and remember, *if you've done your best we'll all be very proud of you, even if you do turn out to be a pathetic failure* – jot down details of the following in your Filofax...

1) Write a best seller with *Pandora*

Whenever the *Sunday Times* or the *Observer* magazines get really stuck for something to write about – usually about August or so – there's invariably a profile of some spotty games programmer 'Erbert aged 19 leaning against his brand new red Lotus, bought on the proceeds of *Gonzoids!* and *Wizzywangers*. The piece is bound to be entitled something like, "WHIZZKID!" I know, because I've written similar stories myself.

The galling thing about all this is that though it's admittedly a rare phenomenon, it really does happen. People like D & R Darling and P & O Oliver really have gone straight from pram to sports car, thanks simply to luck (oh, and an immense amount of talent and hard work too, of course). You just know you're doing all right when your accountant advises you to go for a mortgage, even though you could pay for your house in tenners if you wanted to.

Well, they all got started somewhere – and believe you me some of their early efforts were embarrassingly bad. And if you've always fancied your chances, here's one way to put your foot on the first rung of the ladder of success (thank you Blob Monkhouse). For Swift Software has just released *Pandora*, a games-writing utility.

(Historical irony note: There have been games creators before, of course, such as *Laser Genius*. Indeed one of them, *Panda Sprites*, was penned by none other than P & O Oliver, who've since moved on to better – and certainly more lucrative things – with Code Masters.)

Pandora is designed around a bank of 48 sprites – there's an editor too – which can move independently around the screen, wrapping or bouncing off the edges as appropriate.

It is in fact a form of BASIC, but before you start scoffing and dismissing the whole thing as being slower and clumsier than... er, a very slow and clumsy thing, you should be aware of how it works.

Pandora programs are semi-compiled before they're run to gain speed. As Swift director Robin Nixon explains it: 'Every time a BASIC program comes across a command such as GOTO, a search must be made from the first line of the program and going through every line until a line number is found matching that after the GOTO.

'*Pandora* doesn't work like that at all. Instead the command LABEL is used extensively, followed by an identifying name which can be jumped to very quickly with a GOTO label instruction. Then, during compilation, all these labels are replaced with the actual address in memory of the next instruction, so that *Pandora* can perform GOTOs instantly.'

But how do you use it? 'Firstly', said Nixon, 'your program must be created as a pure ASCII file – *Protext* will do very nicely. Then *Pandora* is loaded from disk, and your program compiled into an independent machine code file. (Errors are of course reported.) Finally the compiled program may be run from either BASIC or machine code as often as you wish'. There's even a simple ASCII editor program for the four people who own CPCs but no word-processor!

Swift intends to publish a compilation of the best games written using *Pandora*, with royalties on sales going to the authors whose programs are selected. This could the start of something big...

Pandora costs £24.95 on tape and £29.95 on disk. Swift can be contacted on 061 456 0926.

2) Become a professional cheat

You may recall some weeks ago *CPC Centre* told you about 1st Choice Software's 'Choice Cheats' – two collections of infinite lives, invincibility and so on for top games. Well, boss Chris Price is now looking for additions to his range, as well as being keen to get full adventure solutions. He's offering money for polished and thoroughly tested contributions: contact him on 0706 72728.

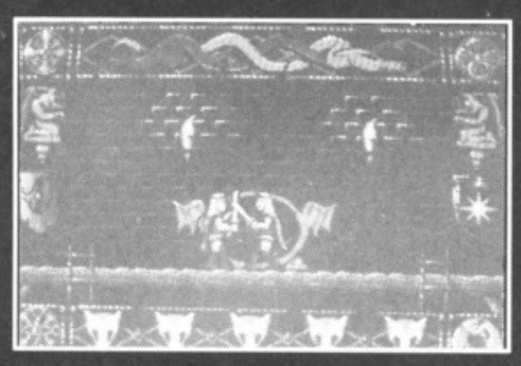
Steve Carey

Hot on the heels of Crazy Horse: a Lone Wolf!

A tidal wave of promotion and hype is about to engulf the computer world, all to boost Audiogenic's Lone Wolf, *the completely unrelated successor to their absolutely spiffing* Emlyn 'Crazy Horse' Hughes International Soccer.

A good dose of scepticism might come in handy, for Lone Wolf *is based on Joe Dever's* Legends of Lone Wolf, *a series of adventure gamebooks that would rank somewhere downwind of Jeffrey Archer and Barbara Cartland for literary merit. I'll burden you with only the shortest of samples:* 'Vonotar found himself tempted. To be back in Toran, surrounded by the other brothers, spending long, dusty hours browsing in the library, or strolling by the river bank debating the issues of the day, or playing vtovlry with all the mirth and companionship that the game engendered, or...' *That's quite enough of that, thank you very much.*

The gimmick with Lone Wolf *is that it's accompanied by an interactive phone line, so that as well as playing on your CPC you can frighten the living daylights out of whoever is repsonsible for keeping BT sweet. The game itself looks to be very much a* Barbarian-*type of outing. As I say, though, before very much longer you won't be able to move for adverts and blatant plugs for all this epic fantasy nonsense. Not my cup of tea, but with Audiogenic spending an estimated £4.2bn on promotion I don't suppose that matters very much, does it?*



• the adventures of Lone Wolf – more dosh for Joe Dever, I s'pose

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SPEX

Shoot away

Amazing! A budget game that doesn't include the word "simulator" in its title and has no mention of those Darling people has just been released. It's called *Zybex*, and it's great. The idea behind the game is thankfully not over complicated: just fly the hero through hordes of aliens, moving up and down where necessary. You don't even have to keep pressing the fire button, as the programmers thoughtfully made you autofire all the time. So it's minimum expenditure all round as you marvel at the detailed backdrops and colourful sprites.

Coming from Zeppelin, producer of the also very good Draconus, *Zybex* is a great shoot-'em-up. Definitely worth exchanging £3 for.

Mailbox

Got any tips you want to share with fellow Spectrum owners? Hints, advice and pokes on games, utilities and programming are welcome. Also comment, criticism and plugs for user groups/fanzines are gratefully received. Heave everything Spectrum-related towards SPEX, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

BASIC information

Yet more people have written in on their knees and begging for help with a variety of Speccy problems. David Sheldrake from Norfolk was just one. He wants to know:

1) About the +3 RAM paging system. He has so far been unable to transfer any of his M/C routines, e.g. Toolkit, 64 column screens etc to run in +3 mode.

2) He has asked me to recommend an extended BASIC and wants to know where he can get an assembler that works in +3 mode.

3) Also about any +3-related books.

Many apologies David, but I can't help you with the +3's RAM paging.

As for extended BASICs, I thought I'd ask a programming buddy of mine and see what he said. Unfortunately, printing everything he said would have meant this week's column causing the loss of several small rain forests. Judicious use of the editorial scalpel has been used, however, and I am now proud to present the complete, if somewhat edited, guide to Spectrum extended BASICs, by a man with a brain the size of Basingstoke – Dave Gosnell.

"There are two distinct categories of BASIC extensions:

A) The type that introduces a handful of extra commands accessed by name.

B) The toolkit with zillions of routines called by RAND. USR.

Obviously, A) is easier to use, as it is literally an extension of BASIC. A good one is *BetaBASIC* by Betasoft, giving plenty of extra commands and a few functions. Facilities include Renumber, Autoline numbering, colour control, area fills, a clock and so on. The problem is that to run a program using the new commands, you need to load up *BetaBASIC* first, which would obviously cause problems with commercial software, as I somehow doubt if the licensing agreement covers the distribution of the actual *BetaBASIC* program. Hence, what seems like a nice soft option sours rather.

Therefore, I prefer B), the toolkit, a good one being any of the *Supercode* series from CP Software. These give hundreds of routines in one large datafile. Individual routines may be surgically removed and included in your own program. You're very much free to market anything you write with the package as long as the author is credited.

In the end, it depends on whether you're happy with plodding old BASIC or not, and whether you want your creations to see the commercial light of day. Personally, I'd go for the toolkit, especially because it has so many routines per pound of hard-earned cash."

Phew. Dave was also able to suggest a possible stockist of +3 books: (What a guy!) **Computer Manuals Ltd, 30 Lincoln Rd, Olton, Birmingham B27 6PA**. Hope that's of some help to Mr Sheldrake. If anyone can help with the as yet unanswered problems, write in as soon as poss.

Infinite beatings

Target: Renegade, the second in the series of mega violent but lots of fun breat-'em-ups from Ocean is a certified toughie. To make it a certified easy, do the following. Select Sinclair 2 as your control option and try your hardest to get on the high score table. Instead of putting the usual initials or whatever else you can spell with four letters, move the joystick left and keep fire pressed down. You soon go past the space reserved for your name and overwrite a few other scores in the table. When you can go no further, press ENTER. The game starts, but looks very different to usual. I think it's actually a test mode used by the programmers. After you've lost a few lives, it reverts back to normal, but this time

with the helpful addition of infinite lives. And just who discovered this handy cheat mode? Well shucks, it was me, during a late night gaming session when my joystick stoped working and I opened her up and had a jiggle about inside. Honestly, it was nothing.

Conceptual software

You may remember me ranting and raving the other week on the subject of Spectrum public domain software. One possible source suggested was the excellent drive-based mag *Outlet*. Someone's written to me to tell me about another.

The company is called Concept, and the writer of the letter, T Jacklin, reckons it's excellent. Apparently it provides software on tape and disk for tres modest prices (£1.99 tape and £5.59 disk in most cases). "As well as providing games, this company really aims at the utility side, with considerable accuracy" says T Jacklin, who undoubtedly deserves a free sample or six for his plugging.

I hope to be scrounging samples of Concept's wares in the near future, and in the meantime you'll find the company at **Concept House, 3 Hendre Close, Rhuddlan, Clwyd, LL18 54E**.

Robin Alway

SECTOR 64 SECTOR

What, more?

Yes folks, there's more and probably more still on the way. I'm talking about the C64's capabilities, which recently have been growing ever greater. You can witness these new ideas and tricks by ordering wicked demos from your PD supplier.

The latest trick we've seen allows the 64's bitmap – which is about 10K of displayed data – move ultrasmooth from left to right in less than 4 chars of the computer's process time. Doing this with software on the 64 could force the machine to die for a few seconds. This new trick can even be used for the normal screen memory, which takes up to 2K including colour. In fact, here's a list of capabilities that your machine is not to have:

- The 64 can have up to 32 sprites on screen, with 8 per line. This is done by using a program which is like a sprite splitting construction kit, but the computer does the choosing.
- Many other tricks include FLD, which allows the screen to have a Y-pixel co-ordinate every char on the screen.
- The oldest tricks include wiping out bottom and side borders. These are now used to place score boxes in many commercial games.

Many people get freaked out when they see something that they never thought possible – for example imagine a Speccy programmer accidentally finding how to give the computer overlaid colour, or – even better – a bug to scroll it smoothly!

Phew, wotta scorcher!

I thought I'd let you know that while writing this week's article it's a sticky 82 degrees – so why not send us some letters concerning anything written in *Sector 64*, just to show you care! Write to Sector 64, 4 Queen Street, Bath BA1 1EJ.

That also goes for any contributions for listings, help or cheats that you have. Remember, you could get famous for one issue! (Donations welcome.)

Oh Wow!

Here's a small bit of advice for any amateur hacker out there. When you reset your 64 from anything, do you ever fancy trying to see if the program you saw was BASIC or if there is a program to re-run it? Then why not try this:

POKE 2050,2 (RETURN)
1234 (RETURN)
LIST (RETURN)

If there is anything there, it should list – but I must stress it will not run 100 per cent, because you have to set the end location of the listing in #45 & #46. If I were you I would poke them with anything high, for example:
POKE 45,50:POKE 46,130 (RETURN)
It now might be possible to run the listing without it saying OUT OF MEMORY!

Cheats

We have a very ancient tip this week from Mr Gingerbread Man (nice name) for *Thundercats*.

POKE 35088,173:SYS 2061 to start the game with unlimited pussy cats.

And here's another from Ginger for the very cool *Buggy Boy*.

POKE 39945,96:POKE 2048,32
POKE 2050,13:POKE 2049,104
SYS 2048 to start.

Ian + Mic

Line shifter

Thanks to G M Miller for this interesting listing. You can include it in your BASIC or machine-code programs – just type it in, and you're away. Don't put text down the sides, though. This isn't a bug, and can be fixed, but G M Miller didn't want the listing to be twice as big.

The program is placed at 49152, so it can easily be used with BASIC. So what does it do? Well, all odd lines move to the left, and all even lines move to the right. Got it?

```
0       FORL=0TO203:READA:POKE49152+L,A:NEXTL
1       POKE53280,0:POKE53281,0:PRINT"[BLACK][SCREEN
        CLEAR]"
2       FORL=0TO24:PRINT" [LIGHT GREEN]SCREEN STRIPPER BY G
        M MILLER"
3       FORL=0TO2000:NEXTL:SYS49152:GOTO2
10      DATA 173,18,208,201,255,208,249,32
15      DATA 13,192,76,183,192,169,1,142,25,208
20      DATA 162,0,189,1,4,157,0,4,189,81
25      DATA 4,157,80,4,189,161,4,157,160
30      DATA 4,189,241,4,157,240,4,189,65,5
35      DATA 157,64,5,189,145,5,157,144,5
40      DATA 189,225,5,157,224,5,189,49,6,157
45      DATA 48,6,189,129,6,157,128,6,189
50      DATA 209,6,157,208,6,189,33,7,157
55      DATA 32,7,189,113,7,157,112,7,189,193
60      DATA 7,157,192,7,232,224,38,208,173
65      DATA 162,38,189,40,4,157,41,4,189
70      DATA 120,4,157,121,4,189,200,4,157
75      DATA 201,4,189,24,5,157,25,5,189,104
80      DATA 5,157,105,5,189,184,5,157,185
85      DATA 5,189,8,6,157,9,6,189,88,6,157
90      DATA 89,6,189,168,6,157,169,6,189
95      DATA 248,6,157,249,6,189,72,7,157,73
96      DATA 7,189,152,7,157,153,7,202,224
97      DATA 0,208,179,96,169,39,206,184,192
98      DATA 173,184,192,208,6,169,39,141
99      DATA 184,192,96,120,76,0,192,0,0,0,0
```


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PCW PATCH

Account for yourself

One of the most popular uses for the PCW (after writing your novel, your proposal letters to publishers and using a database to catalogue the rejections) is accounts. D P Owen of Oxford asks me which packages I would recommend.

For simple accounting – personal and small businesses – *Money Manager Plus* is the I'd go for. It acts as a diary recording incomings and outgoings in up to nine accounts. You can produce simple reports or statements too. It costs £39.95 from Connect Systems (01 743 9792).

For businesses, *Digita Business Controller* is a nice easy-to-use system (£69.95, Digita 0395 45059) and Sage Accounts (£100, Sagesoft, 091 284 7077) is an integrated accounts package with purchase, sales and nominal ledgers.

Amongst Payroll packages the best seems to be *Camsoft Payroll* (£49.95, Cambrian Software, 0766 831878).

PRINTs and the paper

Another sneaky BASIC command not in the manuals. The command POKE 18527,90 will make everything in a PRINT command be printed to the printer instead of the screen; POKE 18527,199 makes it be printed out on the screen again. On a 9512 the corresponding pokes are 18591,0 and 18591,10.

Funny spells

Using the 'replace' function on dubious words in *LocoSpell* produces strange effects. Some users advocate its use on foreign poems or randomly typed gibberish as a means of producing Dadaist prose.

See if you can spot the poem that spawned this *LocoSpell* effort:

In Xerox did Keel Keen
A state pleasure-dome degree
Where All, the sacred river ran
Through cameras measurement to man

No prizes for guessing the author (answer below) but similar examples welcomed from *PCW Patch* readers. This one was nicked from Tim Smith of *8000 Plus*.

Answer: Samuel Taylor Coleridge

Basil Pigg

From the Pigg book of records

Most robust PCW:

Naomi Parker of Orpington had her PCW8256 struck by lightning in a storm in 1988. It was unharmed.

An employee of the NewStar Software had his PCW almost completely melted in a house fire in autumn 1986. It still seemed to work OK when switched on afterwards; the disk drives whirred, and the machine beeped as usual when a boot disk wasn't inserted within a minute. Unfortunately the plastic housing of the disk drive was so warped it was impossible to get a disk into the drive.

• You don't have to be warped to use a PCW, but it helps. This one survived a house fire – and still worked afterwards

● *Do you know of any PCW superlatives? Send to: The Pigg Book of Records, New Computer Express, 4 Queen St, Bath BA1 1EJ.*

QL corner

MacSporran's Lament

MacSporran's Lament is a text and graphics adventure written using Digital Precision's *Adventure Creation Tool*. The object of the game is to rescue the Fair Maid of Inversnoddie from the Castle MacSporran, where lurks the laird Mad Roy MacSporran. Other denizens are a sea-lizard, the Cantraip, and an evil Bogle. The Scottish flavour of the game is maintained by the objects which are lying around (including a sporran and a haggis) and the bagpipe-like music.

Great fun, and good value at £8 on disk or cartridge, plus 80p postage and packing.

Available from **C G H Services, Cwm Gwen Hall, Pencoder, Dyfed, Cymru SA39 9HA**.

QL LISP

Readers feeling LISPless (sorry about that), and who would like to experiment with what is probably the most popular language for AI applications, haven't got much choice, as Metamco's LISP is the only version currently available. This is basically the same package as is available for the Beeb from Acorn.

Rebel Electronics Ltd. hard disk

The Rebel hard disk system for the QL is now operational from a hardware point of view, although it is taking longer to get all the software working than was anticipated. The backplane (enabling a floppy disk/expansion RAM to be plugged into the QL at the same time as the hard disk interface) works fine with a Sandy SuperQboard, but there is a compatibility problem with the Miracle Trump Card. Rebel expects to start shipping units at the beginning of June.

Like the Beeb implementation, this is an interpreter, so it is satisfactory for learning the rudiments of the language, but not for serious work. Another drawback is that it is not compatible with Common LISP, which is the de facto standard. However, LISP is an extensible language, so you could create your own version of Common LISP, if you wished.

The documentation is reasonable, but it would be essential to get a copy of the Acornsoft book on the Beeb version. This is available on its own from bookshops.

The Metamco *QL LISP Development System* costs £59.99 from S.U.B. Tel: (0388) 450610.

John Torofex

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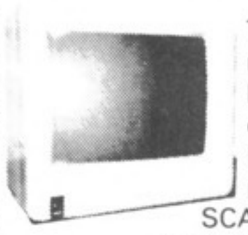

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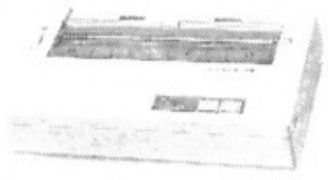

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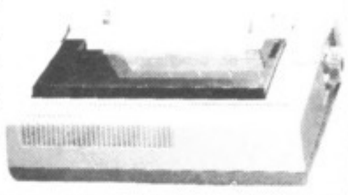

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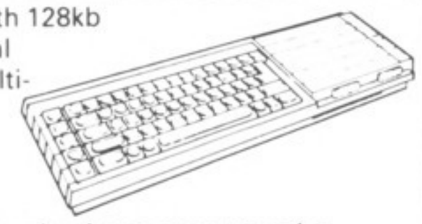

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Taking a lead

Serial connections between computers have never been a subject for the faint hearted. My view of the *BBC>>Mac* software from Human Computer Interface was therefore just a little jaundiced.

As you can guess from the title, it's a piece of software that links an Apple Macintosh to a BBC model B or Master computer. The rationale behind it goes something like this: Acorn dominates the education market. Apple is trying hard to break in, and the use of a Mac on Econet as printer server to a laserwriter makes sense. *BBC>>Mac* and stablemates *Screen>>Mac* and *VIEW>>Mac* aim to make this a reality.

The idea's brilliance lies in its simplicity. When connected, the BBC acts as just another disk drive for the MAC, allowing files to be loaded from within application programs.

Most normal file operations are possible, and the time lag through the serial cable was not too bad.

In use, the only drawbacks proved to be an inability to deal with a hard disk on the BBC, and some slight akwardness over filename conventions. A bonus is the ability to run *BBC BASIC* programs on the Mac, with that application loaded.

My apprehensions over the cabling proved well founded, however. The review copy not being supplied with a cable didn't help, causing some frantic to-ing and fro-ing on a Friday afternoon (thanks go to Peterborough Computers for their help).

I haven't yet been able to test the printer server software, but it certainly raises interesting possibilities for transferrring data around mixed Mac/Beeb networks.

That leads me on to my hint for this week. If you ever need to have an unusual cable made up, make sure you have the exact pinouts for **both** ends. Usually they can be found in an appendix of your user manual.

Legendary game

I have now got a working copy of *Play it again Sam 9*, of which the main interest is in *Camelot*.

I gave the software to a couple of lads for play testing, and after initial problems they both played it all afternoon.

It's an arcade adventure with platforms and ladders, plus nasties of various kinds in a medieval setting. The scenario of collecting the treasure and defeating the baddies is unoriginal, but the overall implementation feels good.

Andrew Brown

Archie attack

By the time you read this, news of Acorn's latest micro should have rippled across even the stillest pond.

I am not going to suggest this particular machine will be the Amiga beater we've all been waiting for, but it's certainly a step in the right direction.

Acorn now has a formidable line-up of machines, and, with faster versions of the ARM chip on the way, will continue to make progress.

MSXTRA

CD bargain

A few months ago I mentioned that we were to expect the release of a huge compilation of games for the MSX on tape, disk and compact disc (CD). Well, now is the time you get one over on all your Atari ST and Amiga-owning friends, because the games are now available in the UK. *The Games Collection* is produced in Holland by Eurosoft, and is distributed in Europe by Premium Software.

I don't know whether we are the first computer format in the UK to have games supplied on CD, but I think we are. The PC Engine has CD ROM software, but I believe you need a dedicated CD drive. All you need for the MSX is a CD player that has a variable output, a headphone socket or an amplifier with a headphone socket through which you play your CD.

The compact disc looks, as you would expect, just like its audio equivalent. Plug your CD player into your MSX's tape input, type in LOAD "CAS:", press RETURN and start the disc playing.

If you have the volume about right, the OK sign appears and you can then run this loader and start the disc again.

After a while, you are presented with a screen which allows you to set the output of your CD player or amplifier to suit the computer. Once you've found the correct level, this procedure can be skipped by changing the short "loader" – this is explained in the manual supplied. The manual says that 64K can be loaded in about 1 minute, and I'd go along with that.

Soft centre

What about the 33 games? Well many have been previously released as full-price (formerly Aackosoft) titles (around £9 each), e.g. *Chopper 1* and *Chessplayer*. There are also many budget-type titles, e.g. *Boom* (*Space Invaders*) or *Frog* (*3D Frogger*). If you don't already own any of these games, then this compilation can only be classed as very good value.

Wherefore art thou?

What on earth has happened to the Konami Software Club magazine? It's now more than four months overdue, and if you listen to the KSC answerphone you hear an apology for the delay and a statement that all magazines will be sent out by March 26th.

Dear people at the Konami Software Club, please give us a date for the release of the magazine – and stick to it. There is a feeling that Konami is no longer interested in the UK MSX user. Please clarify the situation and put an end to all the rumours.

The compilation costs £21.95 (6 cassettes), £24.95 (4 disks) or £27.95 (compact disc) from **Nightdare Ltd, 11B Walnut Road, Chelston, Torquay, Devon TQ2 6HP**. At less than £1 per game, this selection is marvellous value. There's enough here to keep you amused for weeks.

Keith Neal

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ANTICS Roadshow

A new dawn

That's right, from this issue, you'll have your very own column devoted to the Atari 8-bit.

In forthcoming fortnightly columns I intend to review new software – both games and serious applications – and hardware (yes there are some manufacturers still producing tempting trinkets for the 8-bits), give you detailed tutorials on the inner workings of the Atari 8-bit, its operating system and disk drives and help you with any problems you may be having with your own system.

I'm writing this column because, like you, I really like to use Atari's original home computers. There's a lot of mileage left in the 8-bit range and I'm going to exploit it.

Force? What force?

You've seen the movie, hummed the theme tune, watched it being played on other computers and now you can play it for yourself. After being available for quite some time in other formats, *Star Wars* from Domark is finaly available for your little silicon pal. Conversion to the Atari was carried out by well-known 8-bit games producers Zeppelin.

Zeppelin usually receives praise for its games releases for the 8-bit but although this game is mildly entertaining with a modicum of excitement, the thing *feels* like a conversion. You play it knowing the Atari is capable of better things.

The screen shots on the packaging looked good and I booted up the game with real excitement. It was soon dampened! The screen isn't even as well drawn as the Spectrum version and the sound is nothing to write home to Ma about. The object of the game is to destroy the Deathstar. To do this you shoot down waves of Tie-fighters and their missiles whilst manuovering your X-wing craft through various obstacles including towers, trenches and other ships.

Ater ten minutes of play, *Star Wars* was assigned to my big black plastic filing cabinet.

Spartan choice

Hands up all those who read Ms. Jackson's *SpartaDos* review (*Express* 27)? I can't over-emphasise what Millie said about this product, it really is excellent. I used it with *AtariWriter* to write this column and all file manipulation, and disk operations are fast and simple. You can even plug your favourite games cartridges into *Spartados*'s expansion port and they'll work perfectly. My copy is on loan from Frontier Software, the company responsible for its distribution in the UK (call them on 0423 567140). I hope they forget to ask for it back. See you next week...

Emund Blake.

Contact!

Active involvement is a lot more rewarding than passive watching. Boot-up Atari-writer or Paperclip or whatever word processor you're using and tell me what you want to see in your column. Discuss your problems sure, but tell me the good things about your system too. With a little enthusiasm from you, this column will run and run.

LES

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TECH TIPS

Problems with your computer?* Express's Agony column has the answer. *Write in strictest confindence to Uncle Techtip.

Best tips win a freebie – so don't forget to tell us your address and machine

TIP
Dos distress

Re Mr Cox's disk problem (*Express* 27). He probably hasn't corrupted his disks; most protected disks look like corrupted disks to *AmigaDos* because of the non-standard disk structure. This means he would get a message saying the disk was corrupted even if it wasn't. I just hope he hasn't tried DiskDoctor on them...

Mike Allen, Leicester

HELP!
Great ExSPECtations

I have just started a ZX81 and ZX Spectrum 16K club (*...has this letter been stuck in the post for the last five years? – Tech Ed*) and I thought I would write to ask two things:

1. Do you happen to know any ZX81 or Spectrum programmers or software houses who make, or still have in stock games for these machines?

2. Are there any programmers of these machines out there who like to join my club? The address is 1 Northolme Close, Grays, Essex RM16 2NX.

R W Frosdick, Essex

• 1. There are lots of companies still churning out software for the Spectrum, although little of it will run on the 16K machine.

As for the ZX81, I doubt it. A nice micro a decade ago, but now almost entirely forgotten. Try contacting the Sinclair user group at **Chic Computer Club, PO Box 121, Gerrards Cross, Bucks SL9 9JP** who may be able to help.

2. Who knows? Only they can answer...

TIP
Ring it again, Sam

A guy by the wicked name of Digby James called Uncle Techtip during the week to offer help to Jim Rollin (Express 28) who is trying to track down a company by the name of Salmeco.

Digby thinks you may have the name wrong, Jim, and suggests the company Sam Leco. Its address is **9 Fairacres Industrial Estate, Deadworth Road, Windsor SL4 4LE**. Tel. 07535 54717. Give 'em a buzz, whaddaya have to lose (except self esteem, respect, money etc.).

Phoned in by Digby James, Mitcham, Surrey

HELP!
Monitor shortage

I own an Amstrad CPC6128 using an MP-2 modulator plus portable colour T.V.

I have tried in vain lately to purchase an Amstrad monitor for the 6128. All Comet stores in the Birmingham area tell me that they have sold out and don't expect new stocks until late summer. Do you know of any other company that can supply the said monitor? Failing this is there any other monitor that I can use, with some modifications if necessary?

B J Trupp, Acocks Green, Birmingham

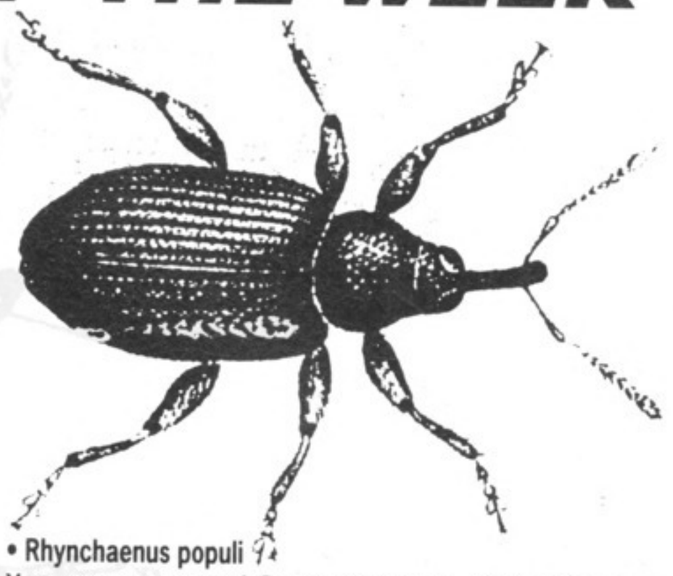
• Any monitor offering a standard composite video attachment will work with your machine. The Philips CM8833 colour monitor is a very good buy at the moment and is available from several of the *Express* advertisers.

Or how about placing an ad in *Express* classifieds, for the cheap, very cheap, so cheap they're almost free price of £5.00, you can bung in twenty words of pithy copy that may elicit some response from our readership. Who knows? It takes all sorts...

BUG OF THE WEEK

If you have an ST disk drive more than 6 months old, don't buy *Populous* (currently No. 2 in the charts). There is a problem with copy protection and if your drive doesn't function in exactly the same way as Atari's previous batch, the game crashes whenever you select one of the playing options.

Keith Ballard, Aylesbury, Bucks



• Rhynchaenus populi
Very common central European species. Derives its name from its habit of swarming in hordes over boot sectors of 3.5" disks

TIP
Mastering drives

I have come across a problem with the BBC Master 128K (*...exorbitant pricing perchance? – Tech Ed*) which causes many owners to incorrectly believe there is a fault with their machine.

The problem occurs when using a 40/80 switchable track drive. Although the drive will work fine in 80 tracks, when you try to access a disk in 40 tracks the computer responds with a disk error 18. The reason for this is that the disk drive speed is set too fast (Acorn ship the computers in this configuration because they assume the user will be using a modern, fast 80 track drive).

The solution is to simply re-configure the machine using: *CONFIGURE FDRIVE 0.

The drive will now work fine in both 40 and 80 track modes.

Edward Stormont, Bushey Heath, Herts

HELP!
Dedicated stuff

I recently purchased a PCW 8256 about which, I have enough questions to fill your entire column. I will however limit myself to the more pressing of these.

1. I bought the machine mainly as an alternative to buying a printer for my old Spectrum +2. Is there any way I can connect the two together? And if so, would I still have to use the monitor as a giant power pack?

2. With *WordStar* 4 at college (and also with *Tasword* on the Spectrum) I sometimes manipulate text into three adjacent columns, but the technique I use for this doesn't seem possible with *LocoScript*. Any ideas?

3. How do I access some of the more useful printer typefaces like compressed and double width? I have a couple of public domain programs to print ASCII files in various styles, but I would like to do this through *LocoScript* as well.

4. I saw an advertisement somewhere, offering something called *Pocket WordStar* for around £40. What is this, and does it use the proper *WordStar* key commands?

5. Finally, concerning ASCII files, are they compatible with other machines, ignoring disk sizes, or have I got the wrong idea about these altogether?

A Drewer, Doncaster

• 1. No. The Amstrad printer is for Amstrad machines alone. Bin the Spectrum, or give it to the needy.

2. *LocoScript* doesn't allow you to edit in more than one column at a time. Our production editor Rod Lawton who is himself a PCW owner suggests putting the three columns on separate pages and running your document through the printer three times.

3. They're in *LocoScript* already! (+P17) selects 17 pitch, (+P15) 15 pitch, (+P10D) double-width 10 pitch and so on. That + is the plus set key, the one by the space bar.

4. Don't touch it with a barge pole. Anything that advertises itself as being 'pocket', 'cut-down' or machine specific is not worth buying. Several manufacturers have bought the right to use the name *WordStar* on sub-standard word processing packages, in the hope that ignorant punters will see the name *WordStar* and buy the product. If you buy it, don't write to me with complaints in a month's time.

5. ASCII files are files which don't contain any control characters but merely alpha-numerics represented by the ASCII code. Therefore, you can move these files from machine to machine without any problems.

(The PCW is supplied with very reasonable manuals. Perhaps you ought to try consulting them now and again?)

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WICKED

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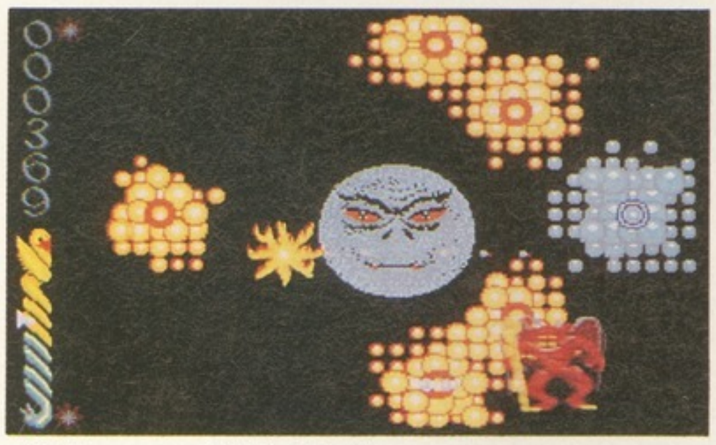

• What can we say? Well wicked!

Electric Dreams presents this little beauty by Binary Vision – the boys who brought you *Zoids* and *The Fourth Protocol*. Despite its terrible documentation, *Wicked* looks set to be cracker.

● GAMEPLAY

You're up against Evil in some sci-fi scenario where you select your battleground from twelve constellations of three stars you need to purge. After choosing a star to cleanse, it's down to a progressively furious strategic shoot-'em-up where you aim to collect and fire spores at the computer opponent's growths. Turquoise growths are the easiest to take out, followed by light blue, green and – worst of all – dark blue. In addition, growth is shape-coded too – from relatively stupid round forms through diamonds and crosses to the strong octagonals.

All the while, your opponent is sowing spores around portals which you must simultaneously attack whilst defending your own centres of growth. After purging a star it's onto the next until a constellation is clear. Then you start out all over again through the next eleven. We might add at this point, that your opponent is one helluva evil illegitimate son of a ...

● GRAPHICS AND SOUND

Excellent. Sprite movement is fast and furious with more happening on screen than you can register at any one time. Control is smooth and response tight. It's in the sound department though that *Wicked* really excels. The accompanying soundtracks are pretty well crafted, but it's the vast range of spot-effects that stand out; a complete cacophony of all the spot-effects you've ever heard – almost as if various other game sounds have been sampled.

● OTHER VERSIONS

Although virtually visually indistinct from the Amiga version, the ST outing comes with different music and less impressive spot-effects – though is still worth a look. It's too early to say whether it'll be out on the 8-bits.

● CONCLUSION

Wicked is well worth a look if you fancy a little blasting with a tactical content above the norm of relentless firing. Here the firing is relentless too – it's just that you have to put your brain into overdrive to keep up with the pace. A veritable visual assault that deserves five stars for its sound.

✪ ✪ ✪ ✪

Andy Storer

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Take out the entire planet of Nom in this original (sic) vertically scrolling shoot-em-up from Logotron reviewd here in its EGA version.

● GAMEPLAY

You play top star fighter Scouser-Gitt (incredibly funny name) at the controls of a Star Goose, the latest fighter to roll off the programming, sorry, production line.

After being dumped unceremoniously from the rear end of the mother ship into a hostile environment, you must propel your craft through obstacles such as mines, laser guns and droids bent on vapourising you.

On the way, you can collect extra armour, weapons and ammunition. And as a reward for all the maiming, there are jewels to be had from various locations on Nom.

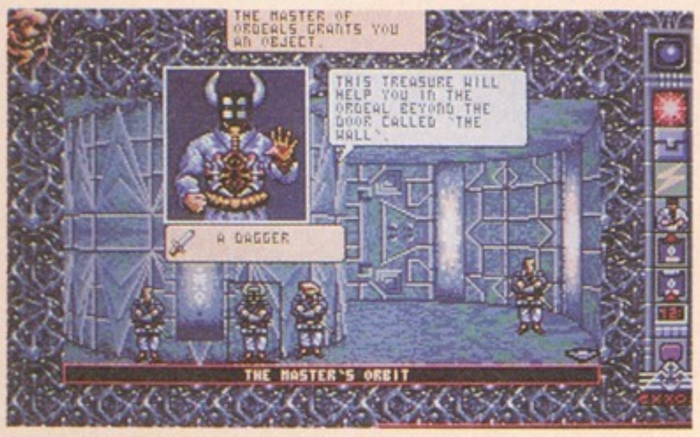
The scrolling landscape – although slow when compared

KULT

(THE TEMPLE OF THE FLYING SAUCERS)

EXXOS/ERE INFORMATIQUE/ INFOGRAMES

ST £24.99dk
Also on Amiga, PC



• The start of the adventure of a lunchtime...

• You have to be careful how you interact with these ugly mutants

GREAT GRAPHICS

Kult is the latest release from the makers of *Captain Blood* and *Purple Saturn Day*, so how does match its predecessor's high standards?

● GAMEPLAY

Taking on the guise of a hero out to save your girlie from the sexual perversions of a mutated race of creatures called the Protozorq, you'll need all your cunning about you in this icon-driven graphic adventure from across the channel.

● GRAPHICS AND SOUND

The backdrops and characters are beautifully drawn and animated, with due care and attention given to their creation and detail. The whole affair is sprinkled with nice little touches such as the differing screen wipes and other visual FX.

The soundtrack on the title screen isn't that great, but the in-game sound-effects more than compensate for this, with a weird psuedo-alien language spoken by the characters and atmospheric audio special effects used throughout.

● OTHER VERSIONS

The ST and PC versions of *Kult* are due for release during the summer.

● EXPRESS VERDICT

Kult marks a subtle departure for Exxos, with its fantasy sci-fi scenario as opposed to *Blood's* and *Day's* hard core sci-fi origins. All the hallmarks of French art design

• Problem: How do you get past this stony-faced character?

are still to be seen however, and above average gameplay for this type of game makes *Kult* almost a cult release (sorry!).

✪ ✪ ✪ ✪

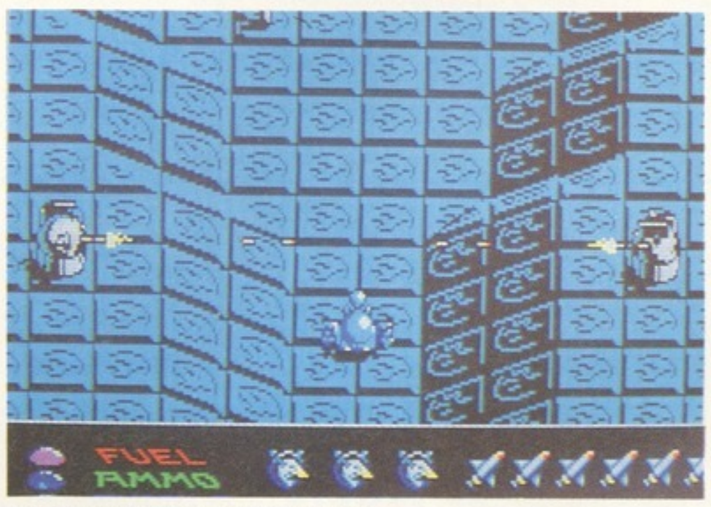
Rik Haynes

with other versions – is reasonably well drawn. Unfortunately (and its a big unfortunately for a game of this type), the screen moves very slowly and jerkily.

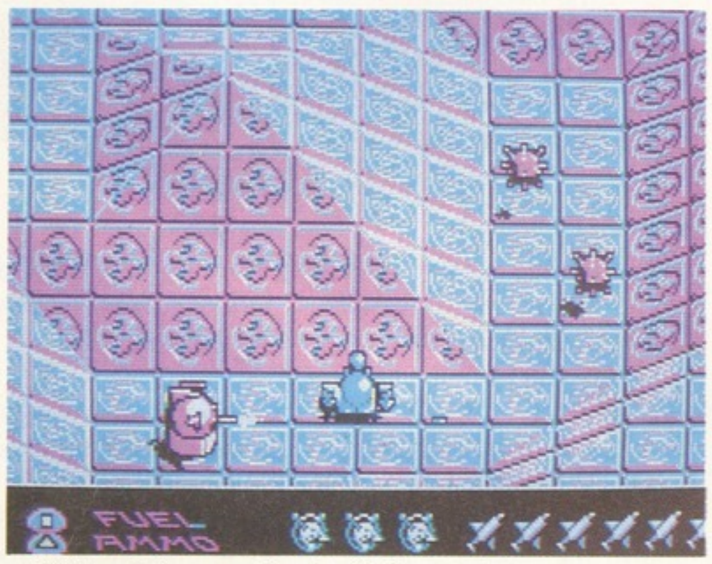
Sound? If I tell you that supplied with the game is a cassette recording of the Amiga version's sound effects, you'll get the idea. Bin the cassette or use it to bootleg the next Gil Scott-Heron open air concert.

● **OTHER VERSIONS**

There's a CGA version for the PC as well as ST and Amiga.



• EGA: What's good for the goose...



• (CGA) ...ain't so good for the (PC) gamester

● **EXPRESS VERDICT**

Star Goose? Star Dodo! Slow, jerky graphics and dreadful sound do not a good game make. Billed as being totally original and the best available shoot-'em-up for the PC, it's easy to be best in a field of one. Perhaps the planet Nom should be renamed Nob reflecting the game.

✪ ✪

Fielding Mellish

STAG

EAS

Atari ST • £24.99dk
Also on Amiga

• We didn't STAGger

Visit new worlds, explore strange exotic locations, meet beautiful alien creatures – and kill them like dogs...

● **GAMEPLAY**

Adopting the role of an intrepid space tripper, it is your task to zoom around the known universe making contact with its myriad inhabitants and exchanging various worthless baubles for their goodies. Unfortunately, nothing is ever as rosy as this scenario suggests. Out there in Biggsville there are one hundred and one pirates waiting for the opportunity to part you from your life-blood and make free with your valuables (sounds like an average ride on London Underground, right?). Luckily for you, the Zynaar 500 you're flying is equipped with several forms of defence such as lasers, phasers and xasers (...any other weapons, ships etc, beginning with Z or X, EAS?). Return safely with the booty and glory is yours.

● **GRAPHICS AND SOUND**

In the early days of home computing when games were written in BASIC, screen displays and sound could be described with the use of just one word: abysmal. Don't know if the premise holds true for this game, but the verdict sure does...

● **OTHER VERSIONS**

We haven't seen the Amiga version yet – and we're in no rush, either.

● **EXPRESS VERSIONS**

EAS put this game in the shops before releasing review copies. After "playing" the game, it's easy to understand why. For those punters already in possesion, return to sanity and dump the package. For those of you still running your sticky fingers over the box in Billy Smith's, beat a hasty retreat and breath a sigh of relief.

✪

Fielding 'Tripper' Mellish

FORGOTTEN WORLDS

CAPCOM/US GOLD

Amiga £19.99dk
Also on Spectrum, C64, CPC, ST, PC

Following on from the brilliant coin-op *Side Arms* come the micro conversions of Capcom's equally playable coin-op *Forgotten Worlds* – hopefully better than the chronic attempts at converting *Side Arms* to micro format...

OVERRATED

● **GAMEPLAY**

It's a simultaneous two-player, horizontally-scrolling, four-level, shoot-'em-up – and that's about it. No surprises, except difficult player control and a really annoying pause between lives as you endure three incredibly boring pictures accompanied by awful sampled speech extracts, while listening to the irritating and out-of-place soundtrack. What a waste of time.

● **GRAPHICS AND SOUND**

Two-layer parallax scrolling backdrops reveals several futuristic landscapes ranging from post-holocaust cities to strange looking forests – although they're rather lacking in colour variety.

The main character sprites are mean-looking, and the adversaries are of a fair standard.

A terrible soundtrack (see above) and the usual selection of sound spot-effects make up what passes for the audio.

● **OTHER VERSIONS**

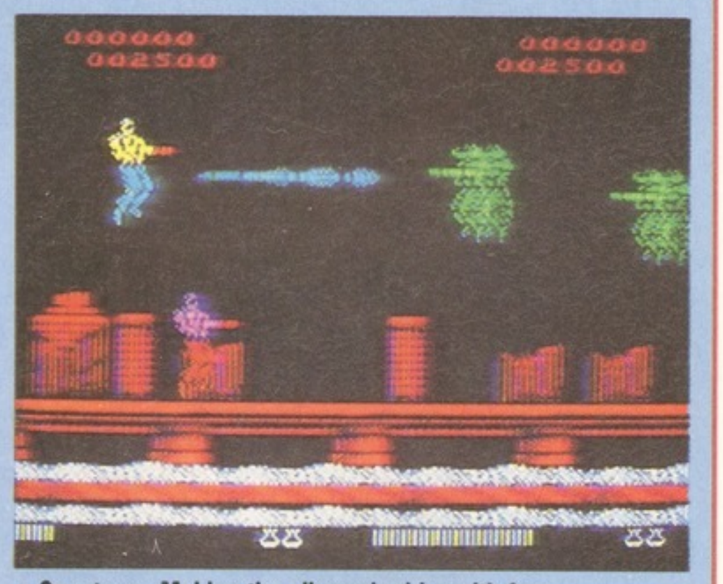
The ST version swaps parallax scrolling for a single layer effect, but still compares favourably to the Amiga version. Spectrum *Forgotten Worlds* is remarkably good when considering its lack of hardware support – although it's a tad too easy to play. We haven't seen the other versions yet.

● **EXPRESS VERDICT**

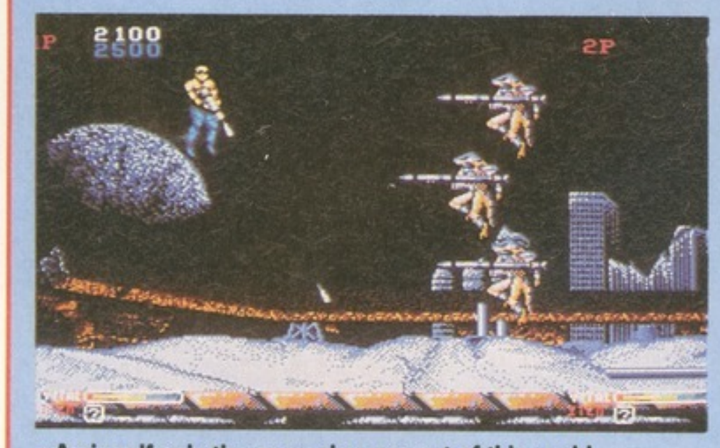
Adequate visuals, indifferent audio and repetitive gameplay help make *Forgotten Worlds* not so much unforgettable, as near totally forgettable. Average in every sense of the word.

✪ ✪ ✪

Rik Haynes



• Spectrum: Making the aliens shudder with fear



• Amiga: If only the gameplay was out of this world

• ST: Looks like your hero's been on a diet since the Amiga

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The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with ½Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

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GUNSHIP

MICROPROSE

Amiga £24.95dk
Also on Spectrum, C64, CPC, ST

At last! *Gunship* has arrived on the Amiga, some two years after the C64 version, and a year after its release on the ST...

● **GAMEPLAY**

Gunship is a comprehensive simulation of the US Army's mean machine attack helicopter, the Apache AH-64, which it hopes will rebalance the Soviet superiority in tanks, armoured vehicles and helicopters thanks to its advanced sensory capabilities, heavy armour, 30mm chain cannon and Hellfire missiles!

OPTION-PACKED

Throughout the game, you're presented with a wide choice of options, missions and flight controls as you battle your way through to the top of the flight class.

● **GRAPHICS AND SOUND**

The reasonable cockpit display is let down by the slowly updated, jerky 3D landscape display, which was acceptable on the C64 but unforgivable on the Amiga. Sound effects are kept to a minimum.

● **OTHER VERSIONS**

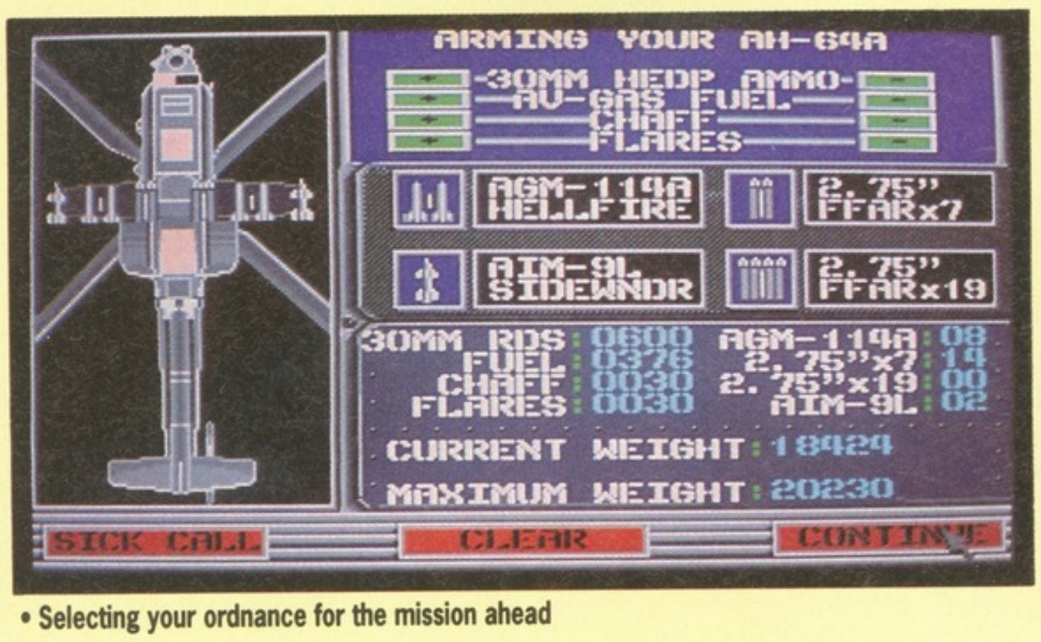
The Spectrum, CPC, C64 and ST versions of *Gunship* are all much of a muchness.

● **EXPRESS VERDICT**

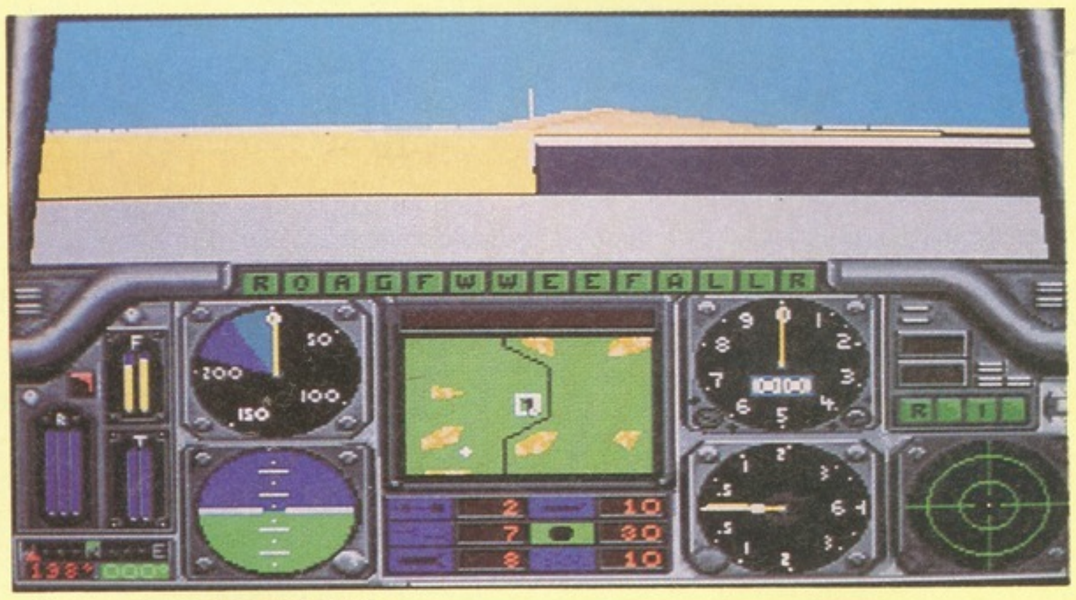
Disappointing in that it has come a year after the ST version without much of an improvement, Amiga *Gunship* still produces an accurate, if somewhat insipid, simulation of the Apache AH-64 attack helicopter.

✪ ✪ ✪

Rik Haynes



• Selecting your ordnance for the mission ahead



• Up up and away (or maybe not)

IT'S A SCAM?

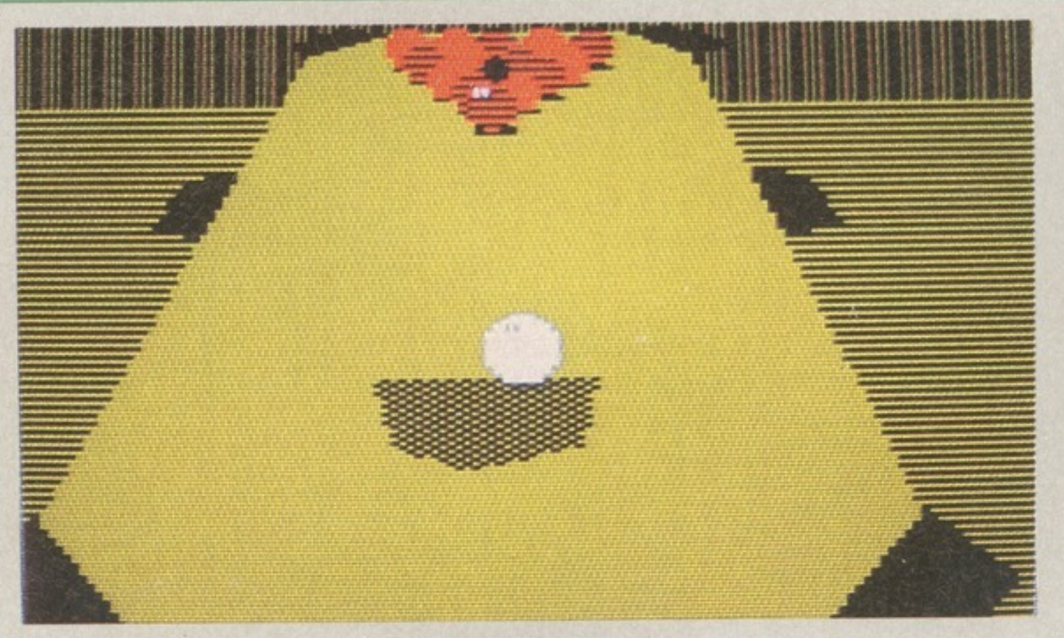
Rik Haynes gets up-to-date with the latest releases, including* Grand Monster Slam *on the C64

TIMES OF LORE

Origin/Microprose • Spectrum • £9.95cs £14.95dk • Also on C64, CPC, ST, PC • Out soon on Amiga

Just released on the Spectrum, this *Gauntlet*-inspired title mixes arcade action with Origin's infamous role-playing techniques, to produce a playable game which gives Spectrumers the chance to sample something a little different from the average coin-op conversion.

✪ ✪ ✪



3D POOL

Firebird/Microprose • CPC • £9.99cs £14.99dk • C64 version reviewed in *Express* 19 • Also on Spectrum, ST, Amiga, Archimedes, MSX, BBC

A very playable version of pool which plays a mean game. A pity about the strange choice of graphics mode used, although it looks much the same on the C64.

✪ ✪ ✪ ✪ ✪

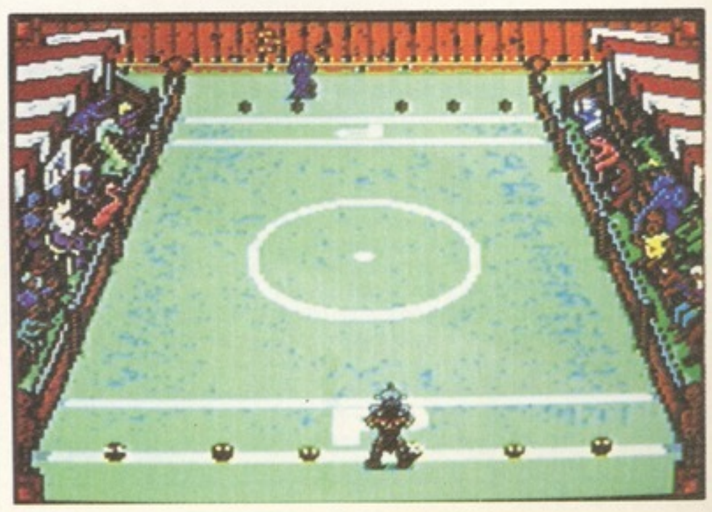
• No time like the present to start the game

GRAND MONSTER SLAM

Golden Goblins/Rainbow Arts • C64 • £9.99cs £12.99dk • Amiga version reviewed in Express 25 • Also on ST, PC

Grand Monster Slam has been successfully converted to the C64, thanks to the enviable programming talents of German software designers Rainbow Arts, producers of some of the most technically competent programs on the C64 and Amiga (*Katakis/Denaris*, *Great Giana Sisters*, *Garrison*, etc). With great audio-visuals and fun gameplay, C64 *Grand Monster Slam's* worth checking out.

✪ ✪ ✪ ✪



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BEYOND OUR KEN

More views from Ken Mosley, a man who calls a spade a spade

Poll position

Like all you lot I got a leaflet about the poll tax this week. We've got all the moaning minnies from pinkoland going on about how bad it is that everyone's records will be stored on computer.

Well, I think the more information about people on central computers the better. And the police should have free access to it. It'll root out all the scroungers and spongers who are dragging this once-great Empire down the pan. After all, I don't mind my personal relationships being on record. I'm waiting for my wife to come over from the agency in the Philippines.

And all this worry that the computer records might be used for other purposes is porridge-brained tosh. A computer list of names and addresses is a marketable commodity, does no-one any harm, and stimulates the economy. I'm all for it.

Only the guilty have anything to fear. The Yorkshire Ripper, Ronnie Biggs, Dr Crippen – they would all have been caught earlier as soon as they got a parking ticket or tried to open a credit account.

Now I'm not the sort of person who believes in compulsory electronic tagging of the population, like my friend Otto from the club in Hanover, though you must admit that would cut crime right down. But Freedom of Information is vital, and it follows that the security forces must have unrestricted access to all computer records about any individual.

This is the BBC. Any offers?

Owners of this week's Radio Times will notice yet another example of how the BBC is promoting the Acorn machines, this time in the Blue Peter competition of Thursday, June 1st.

Express can exclusively reveal the program listings for next Thursday, smuggled out of the Radio Times offices by one of our spies. It gives a glimpse of how the Beeb is going to promote the BBC machines on their own programmes in the future.

TV

THURSDAY

BBC 1

5.00pm Newsround

5.05pm Blue Peter
with Mark Curry
Caron Keating, Yvette Fielding and John Leslie
Lead-Free Competition
With prizes of brand new BBC A3000 computers and the chance to make your own film report on how Acorn computers are made.

5.35pm
Neighbours
Scott buys *Virus* for Charlene's BBC A3000 – but she wants to keep hold of her BBC Master...
Written by JEFFREY TRUMAN
Directed by DAVID BRABEN
• VIRUS is available from BBC Enterprises, London W1A 1AA

6.00pm
Six O'Clock News
with Nicholas Witchell and David Braben
and lots of people in the background all using BBCs

6.30pm
Regional News Magazines

7.00pm
Top of the Desktops
The best new DTP relea the week for the BBC M and Archimedes machin Introduced by Gary Dav and David Braben.
Lighting DEREK SLEE
Programming MARTIN DEANE
Beta testing PAUL HAINES
• SIMULTANEOUS BROADC with BBC User Club Bulletin

7.30pm
EastEnders
'Go on, Frank. You need extra RAM. If you're goir to upgrade to an A3000, d now.'
Written by DAVID BRABEN
Directed by DAVID BRABEN
• RAM UPGRADES

Shoot from the Lip... *the week's most quotable sayings*

"PC users are using maybe seven per cent of their PCs – they're very under utilised."
Tom Swithenbank, president of International Data Corporation

"Hackers like to think they are very clever don't they. They think that way because they haven't been caught.

"But then we haven't got great armies of policemen out there chasing after them."
Detective Inspector John Austin (head of Scotland Yard's computer crime squad)

NEXT WEEK

Bulletin Board Sex
Express investigates the seamier side of comms

OOPS!
The system that writes programs for you

Photon Paint 2
Another amazing Amiga graphics package

Archie column
The column for the machine of the 90s?

Tech tips
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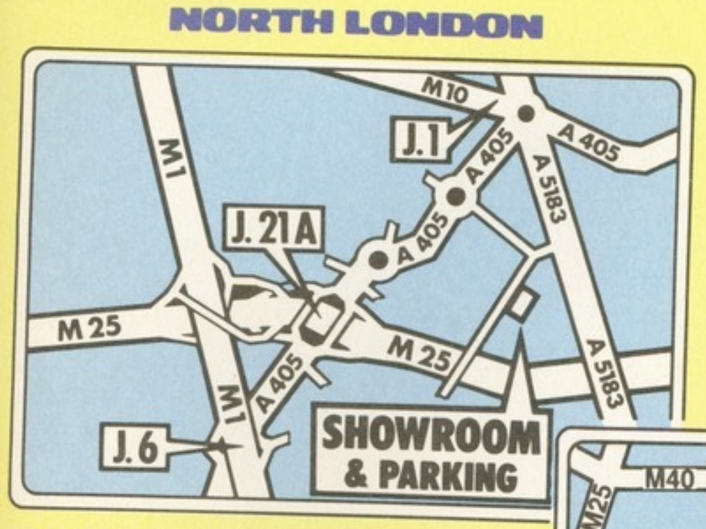

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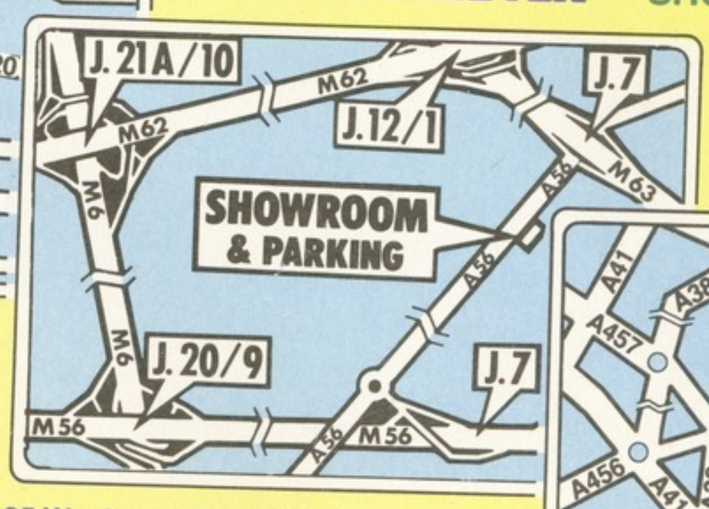

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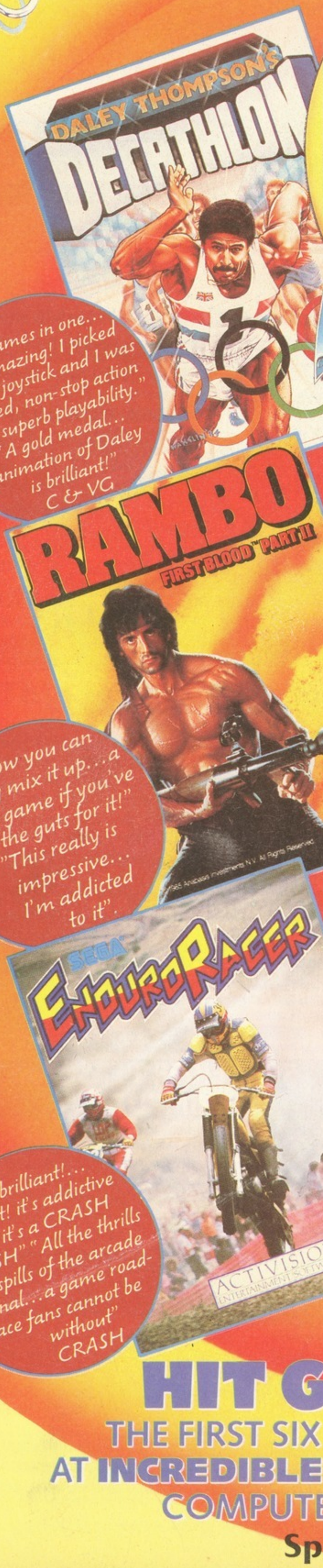

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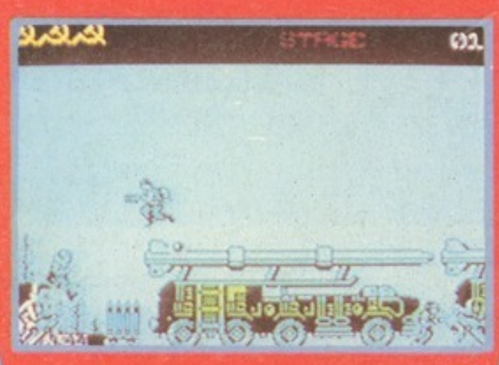
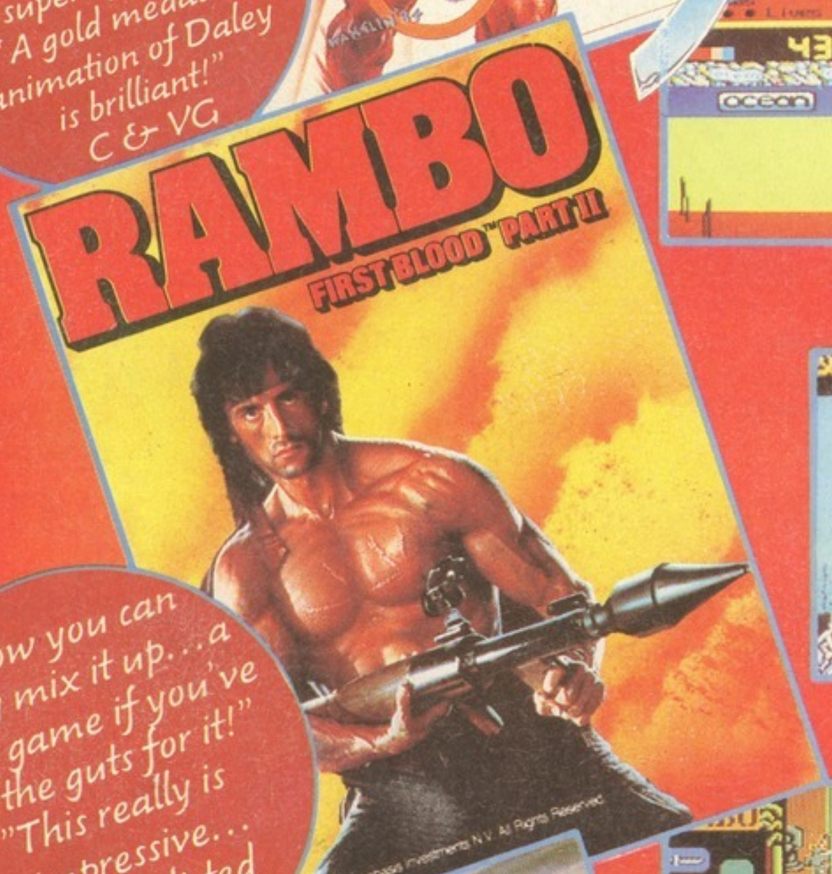
"I just can't put it down!... the variety of moves is fantastic and the game-play is explosive!..." "All the features of the coin-op hit... fist devotees will love it." ZZAP





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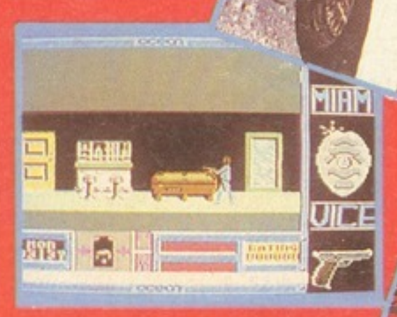

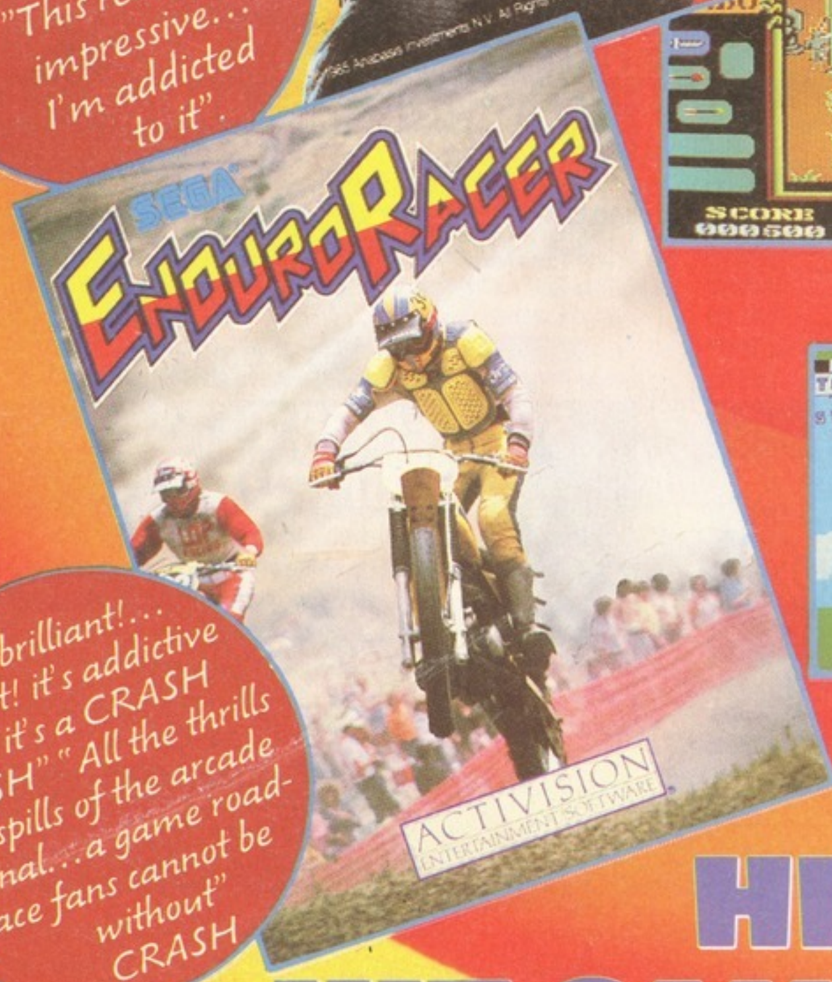

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